

TIME



Tehran's  
new power

**By Massimo Calabresi**

Why it's a  
good deal

**By Joe Klein**

# I TEACH A CLASS OF 4<sup>TH</sup> GRADERS

With my RA Pain



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April 2014

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## Cover Story

### The Iran Nuclear Deal

Obama has delivered on his promise of diplomacy. Will his gamble pay off? **By Massimo Calabresi p. 30**

#### Giving Iran a Chance

For once, the West bets on Middle East peace

**By Joe Klein p. 36**

#### Pros and Cons

Leon Panetta, Madeleine Albright, Dennis Ross and others weigh in on the deal **p. 38**



People in Tehran celebrate the nuclear accord reached on July 14

#### Cold Comfort

Egg freezing is being marketed to young women as an insurance policy. But the data is less reassuring

**By Charlotte Alter p. 40**

#### Blood Will Tell

New technologies tap the diagnostic power of blood tests

**By Alice Park p. 46**

#### Brother, Can You Spare a Few Thousand Dollars?

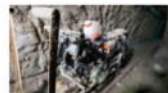
Peer-to-peer lending is changing the way we borrow money

**By Sean Gregory p. 50**

#### On the cover:

Photo-illustration by Joe Magee for TIME

#### Conversation 6 Verbatim 7



#### The Brief

What drug lord El Chapo's escape from prison means for Mexico **9**

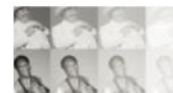
Should Greece privatize the Acropolis? **10**

Ian Bremmer on China's market woes **12**

Farewell to actor Omar Sharif **13**

And now, the GOP candidates for First Lady (or Man) **18**

Humanity gets its closest-ever look at Pluto **20**



#### The View

James Poniewozik: Don't pull the plug on *The Cosby Show* or *The Dukes of Hazzard* **23**

What drives the violence of fanatical fans **24**

The ups and downs of a proposed Paris skyscraper **25**

Jeffrey Kluger on why science is winning the vaccine wars **25**

How to beat your smartphone addiction **25**

Mandy Oaklander on the benefits of float therapy **26**



#### Time Off

John Anderson on Marvel Studios' *Ant-Man* **53**

The troubling revelations of Harper Lee's *Go Set a Watchman* **55**

The paintings of Gustave Caillebotte, an Impressionist for our time **56**

Susanna Schrobbsdorff on what she learned from her unused kitchen appliances **59**

10 Questions with U.S. soccer star Carli Lloyd **60**



## What you said about ...

**WARREN'S WAY** Michael Scherer's July 20 feature on Elizabeth Warren's influence in Democratic politics prompted Simon Horness of Tucson, Ariz., to cheer on her non-candidacy: "Please don't run for President so that you can keep the White House & Congress on their toes," he wrote. Terry Hammer of Huntington Beach, Calif., had the opposite reaction: a presidential candidacy for the Massachusetts Senator would be great—for Republicans. "She'd be a disaster nationally," he wrote. Meanwhile, Virginia Butterworth of Tiverton, R.I., suggested what Warren should do next: aim her pro-consumer power at "usurious" credit-card interest charges.

'Who's afraid of Warren? The same people [who were] afraid of Teddy Roosevelt, FDR, and JFK and Bobby Kennedy.'

@FOODYBOB,  
on Twitter

**VIDEO GAMES** On TIME.com, Rosalind Wiseman, author of the adolescent-culture study *Queen Bees & Wannabes*, discussed the most surprising conclusions from a recent survey of 1,400 middle- and high school students—namely, that many young boys don't like the ubiquitous sight of scantily clad women in video games. Some commenters,

like MacroManJr., denounced Wiseman's piece as an attempt to say something "politically correct." But others, like Cmmsrbl, blamed the gaming industry for the imbalance in how male and female characters are portrayed. Those portrayals can be damaging, wrote oneclickboedice, because they make kids feel "unable to live up to ridiculous social images of 'gendered perfection.'"

'Parents should parent and allow their kids access to age-appropriate content. Gamemakers should make whatever they want.'

HUGOACE, on TIME.com



## SELFIE SHTICK

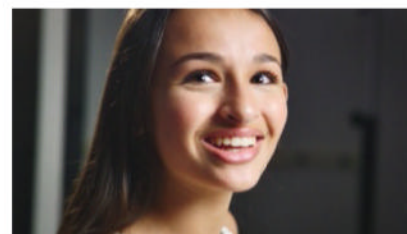
When photographer Gjon Mili invited celebrities to take self-portraits at his studio in 1944, it was still 70 years before *selfie* would make it into the *Oxford English Dictionary*. And yet the results—like this photo of singer Lauritz Melchior holding the camera's shutter release—are not so different from the front-facing camera shots we take today with smartphones and selfie sticks. See more of the portraits on [life.time.com](http://life.time.com).

## BONUS TIME

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**NOW PLAYING** Fourteen-year-old Jazz Jennings—one of TIME's most influential teens of 2014—has rocketed to fame as a confident, articulate advocate for the transgender community. In a new video, the star of TLC's new docuseries *I Am Jazz* talks to TIME about her story, as well as the courage of trans people who find ways to "live their lives authentically." Watch it at [time.com/jennings](http://time.com/jennings).



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# 'This deal offers an opportunity to move in a new direction. We should seize it.'

PRESIDENT OBAMA, hailing a deal with Iran to curb its nuclear program in exchange for a lifting of economic sanctions, and vowing to veto any effort in Congress to block the accord



**Harper Lee**  
The author's sequel to *To Kill a Mockingbird* had the most Amazon print preorders since the last *Harry Potter*



**Atticus Finch**  
Lee revealed in *Go Set a Watchman* that the beloved *Mockingbird* character was actually racist



'I JUST COULDN'T IMAGINE MINIONS BEING GIRLS.'

PIERRE COFFIN, director, saying the characters in *Minions*, which had the second best animated box-office opening ever, are all male because of "how dumb and stupid they often are"

\$200,000

Sum that fell out of a bag in a tree at a German campsite, largely in 50-euro notes



'I JUST WANT TO REMIND EVERYONE THAT I AM JUST ANOTHER HUMAN.'

'I ask them not to yield to an economic model which is idolatrous.'

POPE FRANCIS, continuing his antipoverty campaign with a harsh critique of capitalism as a system that sacrifices "human lives on the altar of money and profit"



ELLEN PAO, embattled Reddit CEO, announcing her resignation on the popular Internet message board

5

Number of days a Florida woman went without realizing **she had been shot in the leg**, before doctors found the .38-caliber slug



62

Number of hair bands found **in the stomach of a Pennsylvania Labrador**, along with eight pairs of underwear

'This represents ... an affront to the Mexican state.'

ENRIQUE PEÑA NIETO, Mexican President, responding to the escape from a maximum-security prison of famed drug lord Joaquín "El Chapo" Guzmán, his second jailbreak in 15 years



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# The Brief

‘IF THERE IS A COMMON THEME, IT IS THE LACK OF UNIFORMITY.’ —PAGE 18



*Drug lord Joaquín “El Chapo” Guzmán vanished through a tunnel outfitted with a motorcycle on rails*

## CRIME

### A humiliating jailbreak puts Mexico back in a place it tried to leave behind

By Karl Vick

THE FIRST TIME JOAQUÍN GUZMÁN escaped from a Mexican prison, in 2001, he was just a gangster. But during the 13 years he remained at large, drug trafficking grew into such an extraordinary menace south of the border that El Chapo, Spanish for Shorty, took on the dimensions of myth. Educated to the third grade, he became both a billionaire while on the lam and the world’s best-known drug lord. The Sinaloa Cartel he commanded grew into the largest, most rapacious enterprise in an underworld that operated with such impunity it challenged the state itself. Guzmán’s capture, in February 2014, was a momentous event in the history of modern Mexico because it signaled, after a period of some doubt, the primacy of the country’s national government. And his latest

escape, on July 11, calls that primacy into question once again.

With Mexico, the question is always, Who’s in charge here? On paper, the answer was whosoever the people placed in power. But you can’t always believe what you read. For seven decades, political control was perpetuated by the PRI, the Spanish-language acronym for the Institutional Revolutionary Party. The name—institutional *and* revolutionary?—fairly clanged with cynicism, and the corruption of the ruling structure extended to a drug trade that thrived in Mexico at least from the days in the 1940s when the U.S. Army allegedly imported opium, after Japan endangered its Asian sources of battlefield morphine.

The paradox is that things worsened after the country embraced

political reform. The bloody chaos that exploded around the drug trade after the 2000 electoral loss of the PRI was, in no small part, fallout from the long-overdue demise of single-party rule and its stabilizing architecture. With the PRI out of office, narcotraffickers fought viciously against one another and the state in grotesquely violent conflicts that have killed more than 80,000 people since 2007, according to a government count. (Some independent researchers say the toll is more than 1½ times that.) It was war, and the U.S. joined in, sending matériel, drones and streams of intelligence that on Feb. 22, 2014, located El Chapo in the Mazatlán condo where Mexican marines placed him under arrest.

They had been close before. Days earlier, as marines closed in on a safe house, Guzmán slipped into a bathroom, pushed a button, waited while the bathtub lifted into the air, then disappeared into the tunnel underneath. Tunnels are pretty much standard equipment in the world of Mexican drug trafficking, a trend Guzmán is credited with starting. Since 2006, U.S. authorities have detected at least 80 beneath the southern border, many reinforced, ventilated and electrified. Tunnels are very difficult to detect—Israel, which innovates constantly in military industries, has yet to find a way to tell where Hamas is digging out of Gaza—but it helps to know where to look. Prisons are a logical area to keep an eye peeled.

His escape brings Mexico back to a place it intended to leave behind, the cartoon realm of oily Federales and desperate villagers. “I told you so!” Donald Trump crowed on Twitter. The reality—plain enough to the over 25 million Americans who in 2014 visited there, more than any other foreign country—is that the U.S. shares not only a 1,954-mile (3,145 km) border with Mexico but also entwined economies, populations and responsibility for the drug trade, which is driven after all by relentless American demand. The cartel wars have occasionally bled into the border states, but their product reaches even deeper into the U.S. Guzmán was just renamed Public Enemy No. 1 in Chicago, where his cartel supplies as much as 80% of the city’s illicit drugs. American gangs take it from there.

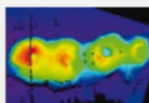
U.S. officials say they are keen to join the hunt but have been kept at bay by the Mexican government, which is back in the hands of the PRI. President Enrique Peña Nieto campaigned on a vow to reduce drug violence and redefine Mexico as a modern economic success story. “This escape shows the problems are deep down and affect the whole system, whoever is in power,” says Alejandro Hope, a former member of Mexico’s federal intelligence agency. “The discussion now has to be about mending Mexico’s broken institutions.” —*With reporting by* IOAN GRILLO/MEXICO CITY

## TRENDING



### DIPLOMACY

The city of Nairobi is attempting to spruce itself up by filling in potholes, repairing streetlights and planting flowers ahead of **Obama’s visit to Kenya July 24–26**. But some have criticized the improvements as superficial, dubbing them “Obamacare.”



### SCIENCE

A team of Australian scientists accidentally discovered **four huge underwater volcanoes** while searching for lobster larvae about 155 miles off the coast of Sydney. The cluster is about 50 million years old and may provide insight into how New Zealand and Australia separated.



### WEATHER

The last snow of Boston’s record-breaking winter **finally melted** July 14. Boston Mayor Marty Walsh had asked residents to guess on social media when the final pile of plowed snow in the city’s Seaport district, once 75 ft. (23 m) high, would disappear. The winner will meet with Walsh.

## BIG QUESTION

### What could Greece sell off?

AS PART OF A NEW BAILOUT DEAL with European creditors unveiled on July 13, Greece has agreed to sell off state assets to generate €50 billion (\$55 billion) in the years to come. Though the deal does not specify what kinds of assets will go under the hammer, there are some likely contenders:



**REAL ESTATE** Greece has already begun selling off landmark buildings, including neoclassical Culture Ministry offices in Athens, and has leased two of the capital’s ancient sites to private companies. According to the IMF, Greece has over 70,000 unused properties that could be sold, but Greek officials insist significant treasures like the Acropolis won’t be put on the market.



**ISLANDS** Greece has anywhere from 1,200 to 6,000 islands, an estimated 227 of which are inhabited. Some analysts, including Nobel Prize-winning economist Joseph Stiglitz, say state-owned islands should be sold only when the depressed Greek property market recovers; private islands are already selling for as little as \$3 million.



**PORTS** Plans to sell off stakes in the Port of Piraeus, Greece’s largest harbor and its major shipping hub for over 2,500 years, are well under way. China’s Cosco Group already holds 35-year leases on two of the port’s cargo piers and will likely invest further now that the government has voted to allow privatization of the port. The government is also likely to sell off stakes in 14 airports.

—NAINA BAJEKAL



### DIGIT

**Number of gunshots fired by Norwegian police in 2014; neither injured anyone**





**BURN NOTICE** Loyalists stack pallets on a towering pyre on July 9 at the New Mossley estate in Belfast. Northern Irish Protestants light bonfires on the eve of July 12 to mark Orangemen's Day, or "the Twelfth," when Protestant King William of Orange defeated Catholic King James II in 1690. The date is often marked by violence; this year nine police officers were injured at a Belfast parade. *Photograph by Charles McQuillan—Getty Images*

#### BY THE NUMBERS

## Women in government

A July report from the Organisation for Economic Co-operation and Development (OECD) found that 16 out of 34 OECD countries, including the U.S. and the U.K., are failing to meet a 30% benchmark of female representation in lower houses of government and in ministerial positions. Although the number of female legislators has nearly doubled since 1995, women hold only 22.2% of parliamentary positions worldwide.

Here, three numbers that illustrate gender representation in the global political arena:

# 19

The number of female parliamentarians elected in Finland in 1907, a year after the country became the first to give women unrestricted rights to vote and stand for election. Today 62.5% of ministerial positions in Finland are held by women. Nordic legislatures overall are 41.3% female, outpacing other regions in gender diversity.

# 63.8%

The percentage of female lawmakers in Rwanda's lower house, giving it the world's highest level of female representation in parliament. Twenty years ago, only 4.3% of government positions in Rwanda were held by women, but the rate shot up after quotas were introduced in 2003 reserving almost one-third of parliamentary seats for women.

Agnes Binagwaho,  
the Rwandan  
Health  
Minister



# 5

The number of states with all-male single and lower houses of parliament. Four of the five—Micronesia, Palau, Tonga and Vanuatu—are in the Pacific region, which has long lagged behind the global average. Women are also absent from Qatar's parliament. In an additional 33 countries, including Japan, Brazil and Iran, women make up less than 10% of parliamentarians.

—N.B.

#### DATA

#### WHERE MILLIONAIRES WANT TO MOVE

Second citizenships are popular among the world's wealthy. Below are the top six places they're drawn to, ranked by net inflow of millionaires from 2000 to 2014:



**U.K.**  
125,000



**U.S.**  
52,000



**Singapore**  
46,000



**Australia**  
35,000



**Hong Kong**  
29,000



**UAE**  
18,000



#### EQUALITY

On July 13, U.S. Defense Secretary Ash Carter said the Pentagon will look into lifting the military's "outdated" ban on transgender service members, ordering a six-month review of the policy. The Boy Scouts of America also unanimously voted to end its ban on gay leaders.



#### JUSTICE

President Obama commuted 46 drug offenders' sentences on July 13. The move came amid his call on Congress to reform parts of the criminal-justice system, like harsh federal sentencing policies that disproportionately affect blacks and Hispanics.



#### HEALTH

The FDA announced it will update warning labels on painkillers like ibuprofen to say they "cause" (instead of "may cause") an increased risk of heart failure. The agency advises taking them as little as possible, especially if you have high blood pressure.

#### THE RISK REPORT

## No, China is not in an economic meltdown

By Ian Bremmer

RECENT MEDIA COVERAGE OF WILD PRICE swings on China's benchmark Shanghai Composite got one major thing wrong: treating China's stock market as if it operated like markets in the West. It doesn't, and won't anytime soon.

Although the volatility in Shanghai will likely continue, the market isn't headed for an October 1929-scale meltdown. China's government has tools it can use to protect the market that Washington doesn't have to boost Wall Street. Beijing can use state-run media, for instance, to signal that the market won't be allowed to fall indefinitely. It can push high-profile brokers to buy billions in shares, order state-owned pension funds to hold their market positions and put a freeze on initial public offerings to keep money from moving out of existing stocks into new ones. It can also decree that no one who owns more than 5% of a company is allowed to sell. The Chinese government has in fact already done all these things and has other tools—effective, if far from perfect—if it needs them.

In truth, the performance of China's immature stock market tells us much less about the state of the real economy in the country than the S&P 500 reveals about the state of economic conditions in the U.S. When the Shanghai Composite climbed 150% in less than 11 months from July 15, 2014, to June 11, 2015, we didn't see any correspond-

ing surge in economic activity across China. Nor did we see a freeze in China's broader economy as the market fell 31.5% in the three weeks from June 12 to July 8. These swings reflect not underlying economic weakness in China but the role that short-term speculating plays in its stock market.

**The performance of China's immature market tells us little about the state of the real economy**

Recent volatility, even if it worsens, will not halt the country's broader financial-sector reform effort. The Chinese leadership has spent the past three years building internal support for its economic agenda and is unlikely to back off now.

Although the stock market's recent thrill ride caused little lasting damage, Beijing faces genuine longer-term risks. It must do more to ensure that banks extend loans and credit more efficiently. It also wants equity markets like the Shanghai Composite to generate finance for Chinese companies and rising living standards for ordinary citizens, and that can happen only if the state stops intervening so directly in market operations. The larger question is whether China can continue to slow its economy at a manageable pace—and that's not one that can be answered by watching the rise and fall of China's stock prices.

*Bremmer is the president of Eurasia Group, a political-risk consultancy*

#### INTRODUCING

## America's newest national monuments

Following a proclamation signed July 10, President Obama has protected more U.S. land than any of his predecessors. —OLIVIA B. WAXMAN

#### WACO MAMMOTH

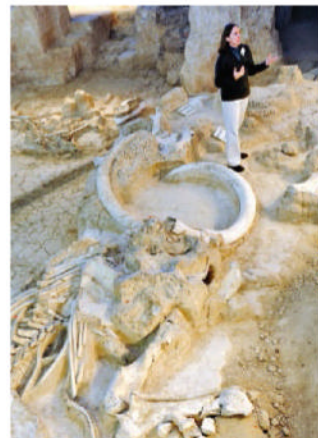
The Texas site (right) is home to remains of the Western camel, giant tortoise, saber-toothed cat and Columbian mammoths—which date back more than 65,000 years.

#### BASIN AND RANGE

The Nevada province is home to one of the largest collections of prehistoric rock carvings as well as Michael Heizer's City, one of the world's largest sculptures.

#### BERRYESSA SNOW MOUNTAIN

For at least 11,000 years, Native Americans have inhabited the California region, which boasts a large concentration of threatened species.





## Milestones

### WON

The women's singles final at Wimbledon, by **Serena Williams**, her 21st Grand Slam singles title. **Novak Djokovic** won the men's title.

### SETTLED

A wrongful-death claim brought by the family of **Eric Garner**. The \$5.9 million deal with New York City came just days before the one-year anniversary of Garner's death, which sparked national protests over police use of force.

### DIED

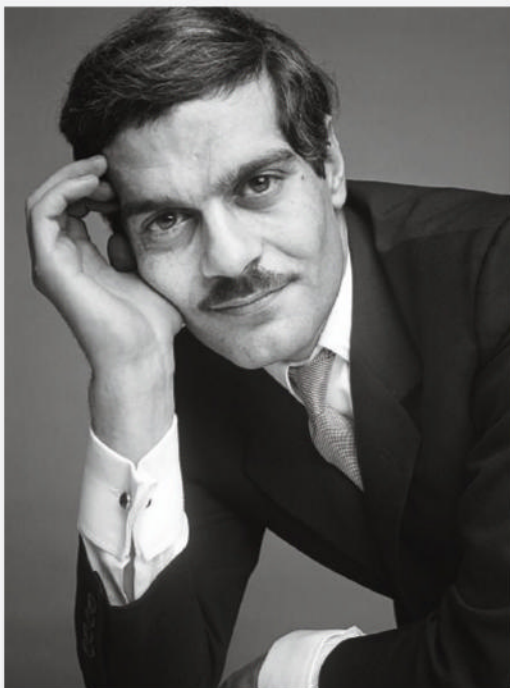
**Roger Rees**, 71, actor who appeared in *Cheers* and *The West Wing*. He won a Tony Award in 1982 for his starring role in *The Life and Adventures of Nicholas Nickleby*.

### REMOVED

The **Confederate flag**, from South Carolina's state-house grounds. Lawmakers voted for it to be taken down after the shooting death of nine in a historic black church in Charleston.

### REOPENED

**Theodore Roosevelt's** home Sagamore Hill in New York State, which had been closed since 2011 for a \$10 million restoration.



Sharif, who died July 10 at 83, starred in *Doctor Zhivago*, *Lawrence of Arabia* and *Funny Girl*

## Omar Sharif Hollywood icon

THE FIRST TIME I EVER SAW OMAR SHARIF was in the film *Doctor Zhivago*. I was a little brown kid living in the north of England who dreamed of one day being an actor in Hollywood. He was an inspiration to me.

It was the first time I had seen a brown man in a Hollywood film who was neither a servant nor a savage. He was a gentleman, a brown gentleman, who held himself with dignity and had sex appeal. Many years later, as a young actor working as a waiter in New York, I was fortunate enough to serve the legend himself. "*Doctor Zhivago*," I whispered to him, "it changed my life."

He leaned toward me and said, "Really? Mine too." —AASIF MANDVI

**Mandvi** is a *Daily Show* correspondent, an actor and producer on HBO's *The Brink* and the author of *No Land's Man*

### DIED

## Satoru Iwata Nintendo chief

"ABOVE ALL, VIDEO games are meant to be just one thing: fun." So said Nintendo president and CEO Satoru Iwata in 2006. The playful Japanese game designer, who died July 11 at 55, was that rarest of confluences in the business world: a corporate leader with bona fide creative experience. A game designer for decades, he became in 2002 only the fourth person to lead the company in over a century, presiding over its most inventive period yet.

It was under Iwata that Nintendo debuted its wildly successful dual-screen handheld Nintendo DS, then shook industry foundations with the motion-controlled Nintendo Wii. Iwata was diagnosed with bile-duct cancer in 2014, but he remained vigilant until the end.

"On my business card, I am a corporate president," he said in 2005. "In my mind, I am a game developer. But in my heart, I am a gamer."

—MATT PECKHAM



## ROUNDUP Shopping 'holidays'

Amazon's recent "Prime Day" is the latest in a series of retailer-created sale events designed to move merchandise.



### GREEN MONDAY

Started by eBay in 2007, this event occurs on the second Monday of December. It pulled in sales of \$1.6 billion in 2014.

### SINGLES' DAY

E-commerce titan Alibaba created this Nov. 11 event as an anti-Valentine's Day holiday for China's single population. Last year it racked up \$9 billion in sales.

### CYBER WEEK

Home Depot's event, which began as a 24-hour sale in 2010, now encompasses a full seven days of deals.

### BLACK FRIDAY IN JULY

The tradition of offering door-buster deals in the middle of summer (under "Black Friday" branding) was started by Target in 2010; it has since been adopted by Best Buy and others.

—VICTOR LUCKERSON

# The GOP's new better halves

By Philip Elliott

THE POLITICAL SPOUSE ONCE HAD A single space to fill, smiling onstage beside her husband and children as the confetti and balloons streamed down. Hillary Clinton broke that mold in 1992, when she offered voters a two-for-one deal: a favorite cookie recipe and a proposal for universal health care.

These days, the spousal rules seem to have fallen by the wayside completely. The current wives (and a husband) of Republican candidates include two Wall Street executives, two nurses, an almost-Ph.D. in marketing and a political consultant who once counted one of her husband's rivals as a client. Of the group, at least eight have taken on major campaign roles such as fundraising, helping to write policy and keeping morale high. There are also those who stay focused on the home front, caring for children along with occasional charity work. If there is a common theme, it is the lack of uniformity. Today's spouses get to support their partners however they please.

## 1. COLUMBA BUSH

**Spouse:** Former Florida governor Jeb Bush

**Credentials:** A graduate of the Instituto Antonia Mayllen in León, Mexico, the former Florida first lady was a stay-at-home mom, raising three children. She famously hates politics and prefers the arts to argument.

**You should know:** She installed Dalí and Kahlo at the governor's mansion.

## 2. CANDY CARSON

**Spouse:** Retired neurosurgeon Ben Carson

**Credentials:** With degrees in music from Yale and management from Johns Hopkins, she has worked as a travel agent, realtor and violinist.

**You should know:** She and her husband founded the Carson Scholars Fund, which has given more than 6,700 grants.

## 3. MARY PAT CHRISTIE

**Spouse:** New Jersey Governor Chris Christie

**Credentials:** After graduating from the University of Delaware, where she succeeded the future governor as student-

body president, she got an M.B.A. from Seton Hall and spent her career on a Wall Street bond-trading desk. She recently quit her managing-director job to focus on the campaign and has been spotted leading Christie around New Hampshire.

**You should know:** During the Sept. 11, 2001, terrorist attacks, her offices were two blocks from the World Trade Center; she was unable to get in touch with her family for hours.

## 4. HEIDI CRUZ

**Spouse:** Senator Ted Cruz of Texas

**Credentials:** A graduate of Claremont McKenna College, with graduate degrees in business from Solvay Brussels and Harvard, she worked in President George W. Bush's Administration before joining Goldman Sachs. Now she keeps an office at her husband's campaign headquarters and weighs in on strategy.

**You should know:** Heidi and Ted Cruz met while working together on the Bush campaign in 2000.

## 5. FRANK FIORINA

**Spouse:** Former Hewlett-Packard CEO Carly Fiorina

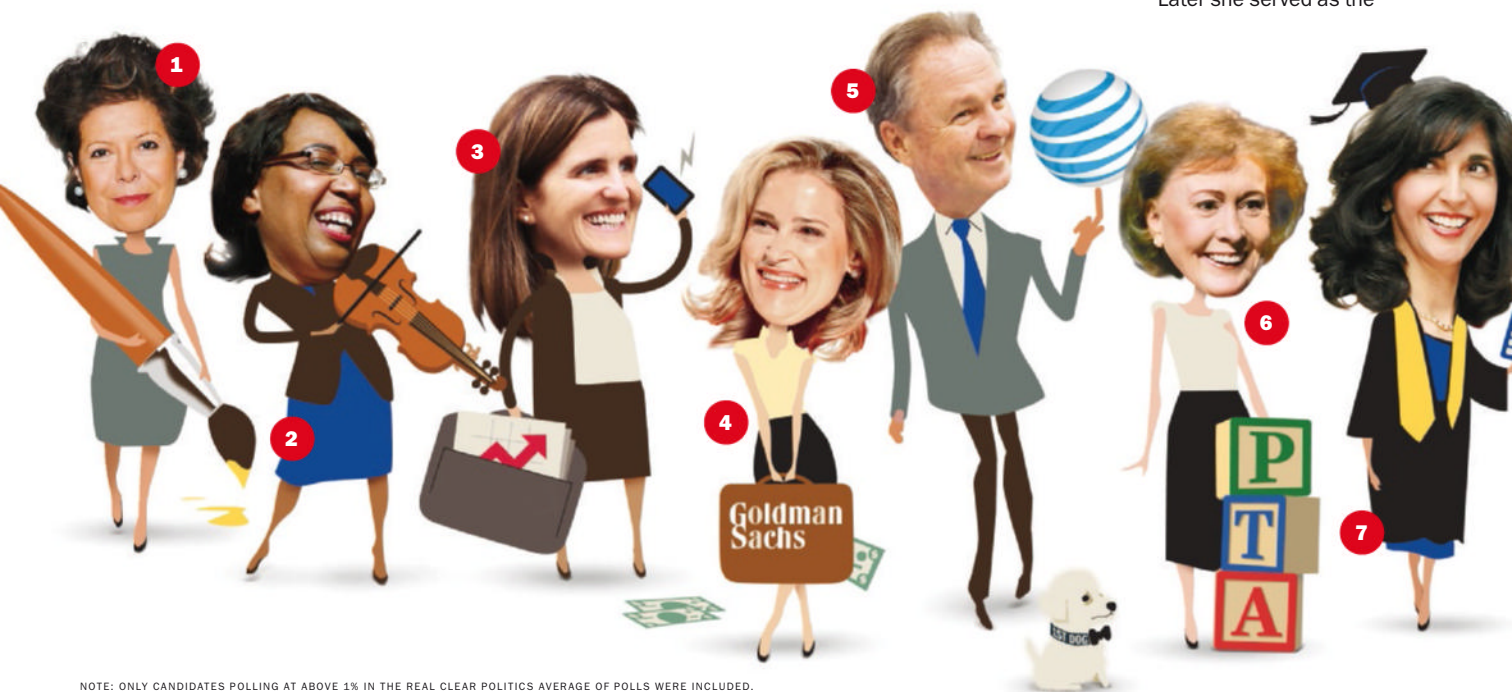
**Credentials:** After attending Penn Technical Institute, he started as a tow-truck driver but retired at age 48 as a vice president of AT&T. He was constantly at his wife's side as a de facto bodyguard when she became CEO and remains a key part of her team.

**You should know:** He is willing to do anything he can for his wife, including taking a reporter with him to Costco to buy toilet paper in an effort to demonstrate that the family is not living lavishly.

## 6. JANET HUCKABEE

**Spouse:** Former Arkansas governor Mike Huckabee

**Credentials:** After degrees from Ouachita Baptist and John Brown universities, she made her family the focus of her time, picking up jobs here and there as a substitute teacher, pharmacist assistant and construction manager. Later she served as the



NOTE: ONLY CANDIDATES POLLING AT ABOVE 1% IN THE REAL CLEAR POLITICS AVERAGE OF POLLS WERE INCLUDED.



Texarkana PTA president and was the 2002 GOP nominee for Arkansas secretary of state.

**You should know:** As a young bride, she was diagnosed with spinal cancer. Her husband drove her every day for radiation therapy.

#### 7. SUPRIYA JINDAL

**Spouse:** Louisiana Governor Bobby Jindal

**Credentials:** After chemical-engineering and business degrees from Tulane University, she has been working toward a doctoral degree in marketing at Louisiana State. Former employers include agricultural giant Monsanto and chemical firm Albemarle. She also runs a science-and-engineering-education foundation and often travels with her husband and three children on the campaign trail.

**You should know:** Bobby Jindal and the former Supriya Jolly knew each other in high school but did not start dating until almost a decade later.

#### 8. KAREN KASICH

**Spouse:** Ohio Governor John Kasich

**Credentials:** After graduating from Ohio State, she worked in health care marketing and PR. An avid runner, she avoids much involvement with her husband's political races.

**You should know:** She bans phone calls in the house after 8:30 p.m.

#### 9. KELLEY PAUL

**Spouse:** Senator Rand Paul of Kentucky

**Credentials:** After graduating from Rhodes College, she was working as a marketing manager for Sprint when she met her future husband. She later became a political consultant, counting Ted Cruz as a client until recently. Now she lends her hand as speechwriter, communications guru and manager of her husband's sometimes cranky moods.

**You should know:** The Senator's given name is Randal, and he went by Randy when he met his future wife. She shortened it to Rand.

#### 10. ANITA PERRY

**Spouse:** Former Texas governor Rick Perry

**Credentials:** With nursing degrees from West Texas State University and the University of Texas at San Antonio, she spent most of her adult life as a nurse and public-health advocate. Her husband's most important adviser, she coaxed him to run for the White House in 2012 and pushed him to try again this time.

**You should know:** She opposes abortion, but unlike her strictly pro-life husband, she has described it as a "woman's right."

#### 11. JEANETTE RUBIO

**Spouse:** Senator Marco Rubio of Florida

**Credentials:** After graduating from Miami-Dade Community College, she became a Miami Dolphins cheerleader and a bank teller before landing a part-time job at a foundation run by one of Rubio's most generous donors. Rubio says his wife's biggest job during the campaign is being

mom to their four children.

**You should know:** The high school sweethearts were engaged only after Rubio finished law school.

#### 12. KAREN SANTORUM

**Spouse:** Former Senator Rick Santorum of Pennsylvania

**Credentials:** With a nursing degree from Duquesne University and a law degree from the University of Pittsburgh, she was recruited by her husband to join his former law firm. After their first child was born, she decided to be a stay-at-home mom. Now she offers campaign advice that includes keeping him on message. A child with a genetic disorder keeps her home as a full-time caregiver.

**You should know:** She has written three books about her children and young people's manners.

#### 13. MELANIA TRUMP

**Spouse:** Real estate investor Donald Trump

**Credentials:** A graduate of the University of Ljubljana in Slovenia, she was a model who appeared on the cover of *Vogue*. Now

she focuses on a jewelry line she sells on QVC and plays a minimal role in Trump's political efforts.

**You should know:** She could make history as the first presidential spouse to have appeared in a *Sports Illustrated* Swimsuit Issue.

#### 14. TONETTE WALKER

**Spouse:** Wisconsin Governor Scott Walker

**Credentials:** She spent two decades working for insurance companies and the American Diabetes Association before joining the American Lung Association as its fundraiser. Today, she is a force inside Walker's political machine and a frequent surrogate, especially to female voters. When Walker considers his next moves, he often turns to her for a final gut check.

**You should know:** Scott Walker met Tonette at a karaoke night and later proposed to her at the same bar. Like her husband, she does not have a college degree.









## SPACE

# Pluto gets its moment in the spotlight

SO THIS IS WHAT PLUTO LOOKS like. It took 9½ years for NASA's New Horizons spacecraft to make a journey of 3 billion miles (4.8 billion km) before it finally whizzed by the dwarf planet at 7:49 a.m. E.T. on July 14. What it sent back were the first closeup images of a planetary body on the outer reaches of our solar system—a triumph for a mission decades in the making.

Traveling at the speed of light, the probe's transmissions needed 4.5 hr. to carry the images back home. When NASA scientists analyzed the wavelengths recorded by New Horizons' instruments and translated that data into what the human eye would see, the people of Earth met a reddish Pluto, with a heart-shaped patch on its surface 1,000 miles (1,610 km) wide.

Far from a cosmic love letter, the heart is a possible sign of geological processes still taking place. It will take NASA 16 months to download all the data from the flyby, but New Horizons isn't taking a break. It's programmed to continue traveling until its power runs out in about 20 years. NASA scientists predict it will encounter a cosmic body even smaller than Pluto on the outskirts of the solar system in early 2019.

—JACOB KOFFLER

*Pluto as seen from NASA's New Horizons spacecraft*

PHOTOGRAPH BY NASA

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FROM THE EDITORS OF GOLF.COM

# GOLD

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# The View

'IN THIS CASE, POPULAR OPINION MAKES A DIFFERENCE—POTENTIALLY A LIFE-AND-DEATH ONE.' —PAGE 25



*New controversies threaten to erase The Dukes of Hazzard and The Cosby Show from our culture*



TUNED IN

## Dump the Confederate flag. Dump Cosby. But don't dump the reruns

By James Poniewozik

FIRST THE WAR IS LOST, THEN THE icons are pulled down. After June's racist church massacre in Charleston, the Confederate flag finally came down from the South Carolina statehouse. And after the release of a 2005 deposition in which Bill Cosby—accused of drugging and raping dozens of women—admitted getting quaaludes to give to “young women [he] wanted to have sex with,” Disney removed his bronze bust from a theme park, like the statue of a dictator toppled in a public square.

So it was for *The Dukes of Hazzard* and *The Cosby Show*. The rejection of Confederate iconography proved too great a leap to clear for the General Lee—the *Hazzard* car emblazoned with the flag—and the reruns were yanked by TV Land. After the Cosby

revelations, Bounce TV and Centric, the last two cable channels rerunning *The Cosby Show*, pulled it off air.

No one was making much money anymore off two '80s series near the end of their syndication life. But we, the audience, lost something all the same. Good or bad, comfortable or awkward, our stories are part of who we are. And every time we bury the ones that make us cringe, we know our own history a little bit worse.

To be clear: I'm not defending the Confederate flag, which is the banner of a nation that fought for slavery and not just an innocuous symbol of “pride.” And I'm not declaring Cosby innocent: I'm not a judge or jury, but the chillingly similar testimony from around 40 women, over a span of years, is unignorable.

Nor am I saying you're obligated to "separate the art from the artist." That's a personal call, and especially tough to do with Cosby, who so deliberately conflated himself with his character on *The Cosby Show*. Cliff Huxtable liked what Cosby liked—from jazz to giant hoagies. He felt what Cosby felt and argued what Cosby argued. Cosby published the best-selling book *Fatherhood* while still on the air as America's favorite dad. According to Cosby's biographer Mark Whitaker, the actor would sometimes slip and refer to his character as "Bill." If he couldn't separate them, you can hardly insist that his viewers do.

But if you believe that pop culture matters, then it matters even when it's uncomfortable (and sometimes for the very reasons it's uncomfortable). *The Cosby Show* remains a landmark piece of American history. It advanced the representation of black families and culture on TV and—however awkward the irony now—showed a generation of kids an African-American dad as a wise, successful father figure. It didn't fix America (as the Charleston shooting proves), but in its way it changed America.

*The Dukes of Hazzard*—well, it's not exactly the same artistic milestone, but even the cheesiest TV is a document of its time. *Hazzard*, launched in 1979, was—beyond the stunt driving and cutoff shorts—a prescient example of conservatism re-branding itself, post-Watergate and pre-Reagan. In the proud, rebellious Duke Boys, it gave us good-ol'-boy traditionalism (family, folkways and that flag) while borrowing from the counterculture the populist, anti-Establishment posture ("fightin' the system") the Tea Party still embraces today.

Of course, most fans probably watch it for the muscle cars and Daisy Duke. That's fine; no one can control the ideas other people take from TV. But believing in pop culture and the intelligence of its audience means making it accessible, not sealed off like the last test tube of smallpox virus, to be studied only by hazmat-suited critics lest it contaminate the masses. The worst tool for understanding history is the eraser.

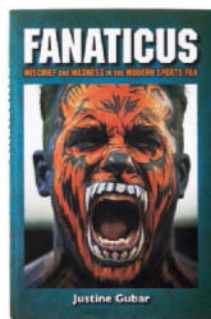
Fortunately, *The Cosby Show* is still available to stream on Hulu, and *The Dukes of Hazzard* on Amazon. Maybe the idea of opting in to the shows is less provocative than their being pushed to your cable box. Or maybe the more mainstream cord cutting becomes, the more of a target streaming controversial programs will eventually be.

Allowing discomfiting TV shows in our cultural library—just like *Gone With the Wind* or *The Birth of a Nation*—is the right thing for a society that believes in ideas. We should repudiate racism, and we should listen to the victims of rape. But TV, like it or not, is part of our history. And those who avoid learning from history are doomed to rerun it.

#### VERBATIM

'Once you get to a certain place, people will hire you. They just want you to be in the movie, so they don't care.'

JENNIFER LAWRENCE, on why established actors don't face the same body-image pressures as ones "who have not made it to a certain place"



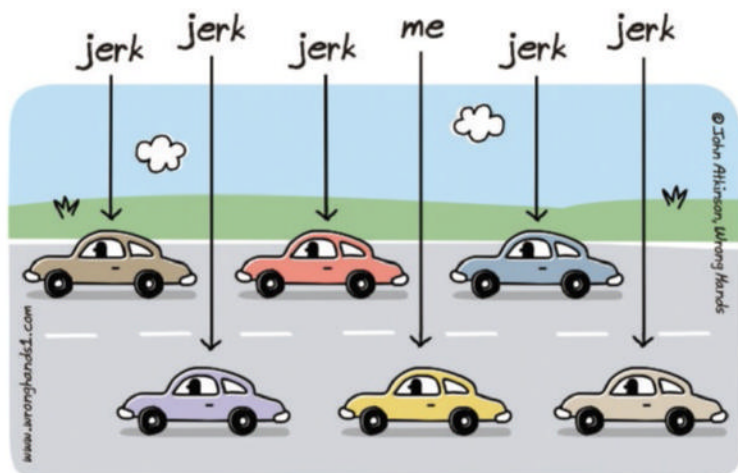
#### THE NUTSHELL *Fanaticus*

WHAT DRIVES "NORMAL" PEOPLE TO loot, fight and even kill in the name of their favorite team? ESPN producer Justine Gubar spent years trying to find out, interviewing experts and researching some of the sports world's deadliest protests and celebrations. Her conclusion: it's a potent mix of alcohol (which flows freely at stadiums), adrenaline (after watching violent combat), perceived anonymity (it's easy to blend into a crowd wearing the same team jerseys) and psychology (studies suggest fans who commit riotous acts are more likely to have rooted their identities in their sports teams). The simplest trigger, however, might be loyalty. After all, the term *fan* derives from the Latin *fanaticus*, denoting deep religious devotion.

—SARAH BEGLEY

#### CHARTOON

### Designating drivers



JOHN ATKINSON, WRONG HANDS

LAWRENCE: GETTY IMAGES; TOUR TRIANGLE ARTIST'S RENDERING: HERZOG & DE MEUNON; ILLUSTRATION BY MARTIN GEE FOR TIME



## BREAKTHROUGH The Triangle Tower

If there's one thing Parisians hate, it's skyscrapers. The drab, boxy Tour Montparnasse has been reviled since it opened in 1973; shortly after, the city passed laws restricting building height. But now, after years of debate and a controversial zoning-law change, the City of Love is set to welcome a new landmark: the 590-ft. (180 m) Triangle Tower, which recently secured approval for construction in the 15th arrondissement. Its unique shape—as designed by Herzog & de Meuron, the architectural firm behind Beijing's Bird's Nest stadium—is meant to minimize shadows cast on residential buildings so it blends more seamlessly into the neighborhood. Will Parisians ever embrace it? *C'est possible.* After all, their predecessors once protested the Eiffel Tower.

—S.B.

Paris' new skyscraper, which will house offices and a hotel, is expected to open in 2020



## QUICK TAKE

# Why science is winning the vaccine wars

By Jeffrey Kluger

YOU CAN'T POLL A SCIENTIFIC FACT. THE speed of light is the speed of light (186,282.4 miles per second) whether 90% of people believe it or 25% believe it.

The same is true for the safety and efficacy of vaccines. They're extraordinarily effective and extraordinarily safe. But in this case, popular opinion makes a difference—potentially a life-and-death one. In nearly all cases, when parents don't vaccinate their children, they put entire communities at risk.

So it's the best possible news that the University of Michigan's C.S. Mott Children's Hospital's recent poll of 1,400-plus parents found that national views on vaccines are changing fast—for the better. Compared with their mind-set a year ago, 25% of parents thought vaccines were more safe (vs. 7% for

less), and 35% were more supportive of vaccine requirements (vs. 6% for less).

That shift confirms what health-policy experts have been saying for years: once parents see the real consequences of vaccine denialism, like the measles outbreak at Disneyland, they will come rushing back for protection. No wonder Jenny McCarthy, formerly the earth mother of the antivaccine movement, has finally gone silent.

None of this means the vaccine fight is over. But it does prove that the antivaxxer community is steadily growing smaller and weaker. Science, which has never sought to be a popularity contest, is winning this one all the same.

*Kluger is an editor at large for TIME*

## HOW TO BEAT YOUR SMARTPHONE ADDICTION

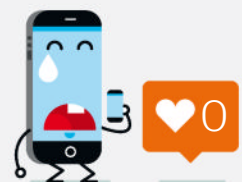
Almost half of American smartphone users "can't imagine" life without their device, according to a series of new polls from Gallup. Here are some research-backed tips to kick the habit.

### RECOGNIZE THE PROBLEM

It's not just making you a poor dinner buddy. Studies have linked phone dependence to stress, anxiety and poor cognitive performance.

### SET SHORT-TERM GOALS

Cold-turkey "digital detox" isn't a long-term solution, says California State University's Larry Rosen. Wean yourself off starting with a half-hour between stealing peeks.



### SPREAD THE WORD

Giving your contacts a heads-up will alter their expectations—e.g., you won't be able to like their Instagram pic instantaneously—and relieve the pressure to always be available.

### SHUT IT DOWN BEFORE BED

Reading on a bright screen can delay sleep, cause less deep sleep and make you less alert the next day. Try an old-fashioned paper book instead.

—KATY STEINMETZ

WELLNESS

# Can float therapy really treat stress?

By Mandy Oaklander

ONCE A WEEK, EMILY NOREN STRIPS naked, squishes in earplugs and slips into a pitch-black chamber, where she floats in saltwater that's the exact temperature of her skin. For 90 minutes, she sees nothing and hears only her breath.

To many, this may sound like a recipe for panic. But to Noren, 29, and others like her seeking relief from everything from eating disorders to job burnout, it's the direct opposite.

In recent years, float therapy—once dismissed as a psychedelic thrill for LSD poppers—has emerged as a potential treatment for stress-based mental conditions. Proponents in the scientific community view it as a shortcut to meditation, a way for people to reach deeply relaxed states without even trying. “In-

stead of sensory deprivation, float therapy is a form of sensory enhancement,” says clinical neuropsychologist Justin Feinstein, director of the Float Clinic and Research Center at the Laureate Institute for Brain Research in Tulsa, Okla.

It's bubbling into the mainstream as well. In 2011 there were an estimated 85 float centers in the U.S. Now, with the rising popularity of mindfulness, there are 271. (There's even an annual float conference in Portland, Ore.)

Data based on more than a dozen studies published in peer-reviewed journals suggest that in healthy people, float therapy can be an effective relaxation technique. It has been shown to reduce blood pressure and levels of the stress hormone cortisol. What's yet to be deter-

mined is whether people who have psychiatric disorders, like depression, could gain therapeutic benefits from floating.

But researchers are actively seeking answers. One study published in the *International Journal of Stress Management* found that for a group of people with stress-related pain, flotation helped decrease anxiety and depression. Next year Feinstein plans to scan the brains of people with conditions like PTSD before and after they float. He expects to see a drop in activity in the brain areas that correlate with anxiety, which could bolster floating's potential as a helpful treatment technique.

“We need more researchers to investigate this,” Feinstein says. “I think this could be a very powerful tool.”

## How it works

TIME talked to Feinstein about how flotation tanks are engineered to enable relaxation



A typical tank at True REST Float Spa in Tempe, Ariz.

**1** Earplugs let people ignore external chatter and focus on the sounds of their body: heartbeat, breath and GI tract. This helps them reach a meditative state faster.

**2** A totally dark tank blocks the brain from getting its usual dose of retinal stimuli.

**3** Isolation gives the body a break from touching anything outside itself, keeping people in an internal state of consciousness.

**4** The air and water are heated to the skin's temperature of about 94°F (34°C), relieving the body of the need to thermoregulate.

**5** Roughly 1,000 lb. (454 kg) of Epsom salts in about 200 gal. (757 L) of water creates an aqueous mattress, reducing demand on muscles and their corresponding parts of the brain. “It's as close to a zero-gravity state as you're ever going to find on earth,” Feinstein says.



A man with a mustache, wearing a blue plaid shirt and jeans, sits in a wooden canoe on a calm lake. He holds a long wooden paddle. In the background, there are green mountains and a blue and white tent on the shore. A duck and its ducklings are in the water near the canoe.

# OF COURSE IT'S GREAT IT'S CAMPING AND IT'S AMERICAN

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Photo: Emily Shur



# Iran Rises

Tehran trades nuclear standoff for regional clout

*By Massimo Calabresi*



*Iranians take to the streets of Tehran on July 14 to cheer their country's historic nuclear accord*

PHOTOGRAPH BY MAJID SAEEDI







## As Secretary of State John Kerry and his Iranian counterpart, Foreign Minister Mohammad Javad Zarif, sat in Room 103 of the Palais Coburg Hotel in Vienna just before midnight on July 13, 20 months

of negotiations hung on a set of issues that had nothing to do with nuclear weapons. Iran had agreed to most of the provisions of the 100-page deal hours earlier, committing Tehran to deep and unprecedented constraints on its atomic program. But Zarif had demanded that U.N. limits on Iran's sale and purchase of conventional weapons be lifted. The dispute had become so heated that the diplomats had asked their staffs to wait outside the room.

Kerry couldn't agree to give Iran immediate access to conventional arms. Just 15 months earlier, on March 5, 2014, the Israeli navy had intercepted an Iranian-supplied tanker, the *Klos C*, carrying scores of rockets and mortars and nearly 400,000 rounds of ammunition hidden in crates of cement bound for the anti-Israel forces of Hamas in the Gaza Strip, according to Kerry's own State Department. Iran is also arming Syrian dictator Bashar Assad in a war that has killed more than 200,000 people and fueled the rise of the terrorist group ISIS. In Yemen, Kerry says, Iran is flying supplies several times a week to rebel forces that toppled the U.S.-backed government and are openly at war with Washington's long-time regional ally Saudi Arabia.

With Iran's nuclear concessions hanging in the balance, and Russia's top diplomats for the first time siding with Iran and angrily pushing for a deal, Zarif met Kerry halfway. Under the agreement, Iran would be allowed to purchase and sell conventional weapons again in five years if the rest of the pact were implemented. With that and the other final issues resolved, the two men stood up, shook hands and went to tell their leaders in Tehran and Washington they had a deal.

The last-minute haggling in Room 103 was more than just the dramatic climax of the long-running nuclear talks. It framed the gamble at the heart of the historic agreement President Barack Obama announced to the world hours later from the White House. The deal represents a strategic

trade-off between Iran and the five nuclear powers that emerged to shape the global order after World War II as well as the nonnuclear Germany. Iran agrees to strict controls of its nuclear program, including 10-to-15-year limits on production of nuclear fuel and tough, permanent international inspections. In exchange, the Islamic Republic gets increased regional leverage, establishing itself as an expanding power in the Middle East, flush with cash and arms, and with international recognition as a potential nuclear power.

In his White House statement, Obama emphasized what he saw as the strategic importance of the deal. The great danger of our time, he said, "is that nuclear weapons will spread to more and more countries, particularly in the Middle East, the most volatile region in our world." Today, he continued, "because America negotiated from a position of strength and principle, we have stopped the spread of nuclear weapons in this region." In the wake of the deal, senior Administration officials say the President hopes to not just contain Iran but also set a new standard for nuclear arms control, reversing decades of spreading nuclear know-how.

That optimism makes others wary. The deal's critics worry that it could pave the way for a spiraling nuclear confrontation in the Middle East and beyond. Iran is already the world's leading state sponsor of terrorism and is involved in every single serious conflict in the Middle East, usually on the side of America's enemies. Whether it finds a way around the deal's constraints or simply waits 10 years for them to begin to expire, Tehran will only get stronger with time. Saudi Arabia has said it will not stand by while Iran gains nuclear capabilities, raising the prospect of an atomic standoff between the region's two ancient enemies. "Instead of stopping the spread of nuclear weapons in the Middle East," said Republican House Speaker John Boehner, "this deal is likely to fuel a nuclear arms race around the world."

## THE NEW ORDER WHAT THE DEAL MEANS FOR THE MIDDLE EAST



**ISRAEL**  
Prime Minister Benjamin Netanyahu called the deal "a stunning historic mistake," arguing that it gives Iran a means to build nuclear weapons.

**EGYPT**  
Once fierce rivals, Egypt and Iran have become closer since the 2011 Egyptian revolution. Both sides will hope for continued cooperation.

Boehner's opinion matters, as Congress can block the deal if a veto-proof majority opposes it in the next 60 days. For Obama, that debate represents a notable triumph after years of patient diplomacy. As a newly elected President, he promised to pursue a peaceful solution with Iran and grounded his entire national-security strategy on revived international nuclear agreements. He has delivered on his promise of diplomacy. The question now is: Will it work?

**LATE IN THE ADMINISTRATION** of George W. Bush, French intelligence analysts poring over satellite photos of Iran





## HOW IT WORKS

### 90 DAYS

The deal will come into force 90 days after the U.N. Security Council passes a resolution approving the accord.

### 1 YEAR

The additional length of time it would take Iran to produce enough bomb-grade material for one nuclear weapon under the accord.

### 5 YEARS

The duration of an embargo on conventional weapons; sanctions on the transfer of missile technology would remain for eight years.

### 15 YEARS

The period during which Iran must not enrich uranium above 3.67% purity. The level of enrichment required to make a nuclear weapon is 90%. During the 15-year period, Iran must transform its Fordow underground nuclear facility into a scientific research center.

### 6,104

The number of gas centrifuges that Iran is permitted to keep, down from its current capacity of 19,000.

### 660 LB.

The agreed cap on Iran's stockpile of low-enriched uranium, a reduction of 98% from the amount it currently has. Iran would achieve the reduction by diluting the uranium or shipping it abroad.

### \$100 BILLION

The amount in frozen assets that Iran is set to gain when the deal is implemented; the windfall is equal to about a quarter of the country's GDP.

spotted unusual construction work in a mountain at the town of Fordow outside the holy Iranian city of Qum. Soon multiple foreign intelligence services were covertly trying to verify the West's suspicion: Iran was trying to build a massive uranium-enrichment facility in violation of its international treaty commitments.

As a candidate for President, Obama had promised to try nuclear diplomacy with Iran, and when Bush's intelligence officials briefed his team on Fordow in late 2008, he wasn't dissuaded. But after nine months of public and private outreach failed to entice Iran into negotiations over its nuclear program, Obama

publicly revealed the existence of the Fordow facility in the middle of an international summit in September 2009. At the time, it seemed like a death knell for negotiations. By the end of the year, Israel was threatening to attack Iran and the U.S. was scrambling to find a way to avoid getting drawn into war.

As it happened, the Fordow revelation helped push the major powers to realize the world had reached a turning point. After the fall of the Soviet Union in 1991, a brief spurt of arms control brought the number of countries known to have nuclear weapons down from 14 to eight. But in the decades since, North Korea had de-

fied diplomatic and economic pressures and gone nuclear. Iraq and Syria had been stopped only by military intervention. If Iran were allowed to build a weapons program, its regional enemies including Saudi Arabia, Turkey and Egypt might all go nuclear too. The nuclear club that had maintained a relatively stable balance of power for decades was in danger of collapse.

On June 9, 2010, the big powers pushed back: Germany joined the five permanent members of the U.N. Security Council—Russia, China, Britain, France and the U.S.—to impose tough new sanctions on Iran. Even more surprising, they

enforced the sanctions with unity and resolve over the following five years, even though it cost them in trade and diplomatic ties. The reason was basic power politics: all five had an interest in trying to reimpose the exclusivity of the nuclear club. “The Russians disagree with us on Ukraine and Syria and a whole host of issues,” says the senior Administration official, but “this was the one issue on which the great powers were aligned: that it would be bad if Iran got nuclear weapons.”

The 2010 U.N. resolutions imposed sanctions on Iran’s banking and financial sectors and blocked its ability to get paid for oil sales. That cut Iran off from its main source of income, but Tehran was defiant. Rather than backing down on its nuclear program, it sped it up. By 2013, it had enough enriched uranium for around eight nuclear bombs, if it chose to refine its stockpiles, and the technical capacity to generate fuel for the first bomb within two months. As recently as 2003, the country had been testing how to make and then fit a nuclear warhead atop a missile. Once again the talk turned to the possibility of a war against Iran to attempt to take out its nuclear facilities.

But the sanctions did their work. With Iran’s inflation rate topping 40% in 2013, Tehran secretly agreed to negotiate, and the U.S. dispatched diplomats to Oman to initiate covert talks about a nuclear deal. Three months later, the talks got a boost with the election of moderate Iranian President Hassan Rouhani, a longtime believer in diplomacy, who appointed the Western-educated Zarif as his Foreign Minister. In November 2013 the nuclear powers, Germany and Iran announced a deal that would freeze Iran’s nuclear program where it was in exchange for the major powers’ agreeing not to impose any new sanctions on the country.

Twenty months later, after Kerry’s last, late session with Zarif, the details of the deal were unveiled. Iran agreed to reduce the amount of uranium it keeps on hand for the next 15 years to no more than half of what it would take to make a bomb. It agreed to remove two-thirds of its 2,700 uranium-refining centrifuges from Fordow and to stop refining there. It promised to operate only about 5,000 at an aboveground site. Those and other constraints mean that for a decade, Iran would remain a year away from having on hand

## A FRAUGHT FOUR DECADES

*Since the hostage crisis of 1979, the U.S. and Iran have had limited diplomatic dealings. Here, a brief history of a troubled relationship.*

**1979**

**The U.S.-backed Shah and his family flee Iran in January**, and two weeks later religious leader Ayatollah Ruhollah Khomeini returns after 14 years in exile. In October, the U.S. allows the Shah to enter the country for cancer treatment. Two weeks later, **Iranian students storm the U.S. embassy in Tehran, taking more than 50 Americans hostage**. The U.S. freezes Iranian assets.

**1980**

**The Iran-Iraq War begins**. The U.S. provides support to Iraqi dictator Saddam Hussein.

**1981**

**Iran releases the American hostages** minutes after Ronald Reagan is sworn in as President.

**1989**

**Khomeini dies**; Ayatollah Ali Khamenei becomes the new Supreme Leader.

**2002**

In his State of the Union address **President George W. Bush says Iraq, Iran and North Korea constitute an “axis of evil.”** In August, an Iranian dissident group claims that Tehran has built secret nuclear plants.

**2007**

In April, President Mahmoud Ahmadinejad announces that Iran is producing “an industrial level of nuclear fuel.” That fall, **the U.S. announces unilateral new sanctions against Iran**, the toughest since the 1979 embassy takeover.

**2013**

**Moderate cleric Hassan Rouhani wins the presidential election in June, taking more than 50% of the vote**. In November, in talks with world powers in Geneva, Iran agrees to curb its nuclear program in exchange for up to \$7 billion in sanctions relief.

**2015**

After 20 months of negotiations, **Iran and world powers agree to a landmark nuclear deal**.



◀ Obama defends the deal July 15

the material needed for a nuclear weapon.

Most important, Iran agreed to tough, permanent international monitoring, including new protocols that allow for visits by International Atomic Energy Agency (IAEA) inspectors to suspicious sites. Critics fear that Iran will cheat and secretly go nuclear, as it has tried to in the past. They worry that Iran can hide parts of a covert program and stall inspectors by using the deal’s lengthy, bureaucratic dispute-resolution mechanism. The Administration says between the IAEA inspections and the intense scrutiny by national intelligence services of every part of Iran’s program, from uranium mining, milling and refinement to international procurement, it will be nearly impossible for it secretly to get a nuclear weapon.

For Obama and his team, the deal was a vindication. “The agreement proves that you can use diplomacy to bring countries back into compliance with the nuclear nonproliferation regime,” says the senior Administration official. Some on the outside agreed. “This moment could represent a seminal achievement in the history of nuclear nonproliferation negotiations,” wrote Ilan Goldenberg and Avner Golov of the Administration-friendly Center for a New American Security in *National Interest* magazine. “The United States should take the most positive elements of the agreement with Iran and turn them into global best practices.”

**IN TEHRAN, THE NEWS** of the deal was met with unalloyed joy. Some youths danced in public squares, while others drove through the streets honking horns and hanging out the windows of their cars. Many were simply relieved at the prospect of economic relief for the country; others saw larger benefits. “Iran is now at its peak of power in centuries,” said veteran Iranian diplomat Sadegh Kharrazi on state television. “This is why the world superpowers have been negotiating with us for so long. That’s why we were able to reach a deal which guarantees our interests.”

Indeed, for all the nuclear concessions Iran promises under the deal, it arguably emerges stronger than it was when Obama first unveiled the existence of Fordow in 2009. When the agreement is implemented and verified by the IAEA, which could come as soon as December, Iran will get access to more than \$100 billion in





frozen overseas assets. And once the U.S. and U.N. lift the ban on bank transfers, Iran can expect as much as an additional \$20 billion in oil revenue per year, according to some estimates.

That money means power, and not the soft kind. Last November, Iran's Supreme Leader Ayatullah Ali Khamenei tweeted nine points about eliminating Israel. The tanker that Israel seized in March 2014 in the Red Sea was the fourth Gaza-bound arms shipment intercepted by Israel since 2002, Israeli officials say. Iran has given hundreds of millions of dollars to Hamas over the past decades, according to testimony by U.S. and other officials. Iran has been directly violating U.N. Security Council resolutions since 2006 through its support for Lebanese Hizballah; one Iranian general declared last November that the organization is effectively one with the Iranian military.

Against weaker foes, Iran has even more influence. In neighboring Syria, Tehran has spent more than \$1 billion

^  
*Republican Senator Bob Corker  
kept talks on track but is skeptical  
a deal will block an Iranian bomb*

to prop up the Assad regime, according to documents leaked to the Israeli paper *Ha'aretz* by the hacking collective Anonymous. In April, Kerry told the *PBS News-Hour*, "There are a number of flights every single week that have been flying in" from Iran to provide military assistance to Houthi rebels in Yemen. Concludes Iranian diplomat Sadegh Kharrazi: "Iran's sphere of influence stretches from the Mediterranean to the Indian peninsula, from Kazakhstan to Yemen."

Which is precisely what worries America's regional allies. Israeli Prime Minister Benjamin Netanyahu called the deal "a stunning historic mistake." The Saudis privately have expressed repeated and increasingly desperate concerns to Obama and his aides about Iran's growing influence. After the deal, one Saudi official

told Reuters that he feared the deal would allow Iran "to wreak havoc in the region." The danger, said Abdulaziz Sager, head of the Gulf Research Center, a Jidda-based think tank, is that Iran will use sectarian divides to push "Saudi Arabia to go into war by proxy."

That is already happening. The multiple conflicts that have erupted in the wake of 2011's so-called Arab Spring nearly all break down along sectarian lines, with Iran backing Shi'ite Muslims and Saudi Arabia and others backing Sunnis. For years the U.S. has been closely allied with many of the Middle East's ruling Sunni families, even as elements of those regimes directly or indirectly backed al-Qaeda and ISIS with money, weapons and training. Some see a natural alliance between Iran and the U.S., or at least see a more powerful Iran as balancing out dominant Sunni power.

Obama has downplayed in public the prospect of improved U.S.-Iran relations, but his top aides say the deal opens the

IN THE ARENA

## Why the Iran deal is a risk worth taking

By Joe Klein



I FIRST WENT TO IRAN in December 2001. It was pretty strange: a well-educated, middle-class police state. Many

women dressed in black chadors in those days. They would not look at, talk to or shake the hand of a stranger. Things were changing, though. I met with a group of young women in a coffeehouse, college students who wore their headscarves back, so their hair could show—a defiant political statement. They were totally hip to American youth culture; their parents all had satellite dishes. At the end, I acknowledged that we couldn't shake hands, but ... "No, we want to shake hands," said one of the women. And we did. It was very moving.

I went back in 2009, for Mahmoud Ahmadinejad's rigged re-election, and was chased through the streets by the religious police, the Basij, who were riding on motorbikes and swinging truncheons. I saw pro-democracy mullahs getting their heads cracked open by these thugs. But my strongest memory was, once again, of women—this time, older and more religious women on the south (poorer) side of town. Most of them were still in full chador, but their behavior had changed drastically. They were talking to me, enthusiastically, as they came out of a polling station, dragging their silent husbands along. They were not just shaking my hand, but grabbing my arm to make a point, cracking jokes—the Iranians have a lovely ironic sensibility—guffawing. When the police came over to investigate what I was doing there, the women shooed them away. This was, clearly, an evolving and utterly compelling place.

I tell these stories—and there are



many more—because in all the frantic argument bound to come over the Iran nuclear deal, there is a tendency to focus on the hard guys—the Supreme Leader, the Revolutionary Guards, the Hizballah terrorists supported by Iran—and it's easy to overlook the significant role played by the proud, sophisticated and pro-American Iranian people's intense desire to rejoin the world. It was their vote that brought the Hassan Rouhani–Mohammad Javad Zarif negotiating

team into (limited) power.

Much of the opposition to this deal will come from Benjamin Netanyahu and his neoconservative friends. But Bibi is an unreliable narrator. He tells gullible American visitors, privately, that as soon as the Supreme Leader gets the bomb, he's going to launch on Israel. "That's what he tells all the Americans," a leader of the Israeli intelligence community told me, laughing at the brazen idiocy of it—the idea that the regime would invite the reciprocal incineration of Tehran. But in May, I heard Senator Lindsey Graham use the same line at the Iowa Republican state dinner. I approached him later, and Graham admitted that what he was really worried about was Iran slipping nuclear technology to terrorist groups like Hizballah. That is a real worry—and it would be nice if the coming conversation took place in the realm of real worries.

There are risks to this deal, obviously. If the Iranians haven't negotiated in good faith, it won't be hard for them to cheat. Then again, if the Iranians are found to be cheating egregiously, it

**The CIA believes  
that any plans  
Iran had to  
build a nuclear  
weapon were  
abandoned  
in 2003**



◀ *An Iranian woman holds the nation's flag aloft in celebration in Tehran on July 14*

won't be hard for the U.S. to do what the Israelis and neoconservatives have wanted us to do all along—obliterate their nuclear facilities.

But those are worst-case scenarios. And while it's important to be vigilant, it is also important to be realistic. The reality is that the CIA believes that any plans Iran had to build a nuclear weapon were abandoned in 2003, when the regime saw the U.S. overrun Iraq in search of weapons of mass destruction and was afraid Iran might be next. The CIA also believes that the Iranian hierarchy is tough but rational, and certainly not suicidal. Iran has behaved in a brutally stupid manner toward its former ally Israel, but it also has real enemies. The growing war between Sunnis and Shi'ites will define the region for the foreseeable future—and Iran has, at this perilous moment, chosen to forgo the most effective deterrent against its Sunni foes, including its unstable Pakistani neighbors, who have a nuclear arsenal and a history of radical coups.

In the coming months, we'll undoubtedly be hearing a lot more about the risks of this deal than about the potential rewards. That's both human nature and political-season demagoguery. A sudden alliance with Iran seems unlikely, but we do have common interests, and the U.S. will be stronger strategically because of this deal, no longer at the mercy of Sunni "allies," who funded al-Qaeda, armed the Taliban and provided safe harbor for Osama bin Laden.

Yes, the Iran deal is risky. But we have been taking all sorts of bellicose risks since Sept. 11, 2001. Almost all of our military ventures have failed. So many lives have been lost. It's time, finally, to take a risk for peace.

space for closer ties if Iran were to change its behavior. They believe the country's pro-Western youth and even some in its leadership would like to pursue the kind of openness that could change the balance of power in a region frozen in antagonism since 1979. But few are holding their breath. In Iraq, Iran has been fighting on the same side as the U.S. against the ISIS militants who are attempting to overthrow the government. The relationship is uneasy, and both sides insist there is no coordination. In Syria, Yemen and Lebanon, sectarian fighting appears only to benefit terrorist groups of all stripes, whether al-Qaeda, ISIS or the Shi'ite groups Iran supports. And those in favor of confrontation in Iran remain powerful: just last April, Iranian naval vessels repeatedly threatened U.S. vessels in the Gulf.

All of which means anything that advances the Iranian-Saudi competition may end up looking more like an arms race than a balance of power. In May, Saudi officials meeting with Obama said they would match whatever nuclear capability Iran gained through negotiations. With their historically close ties to nuclear Pakistan, the Saudis could start down that road with one phone call. "We can't sit back and be nowhere as Iran is allowed to retain much of its capability and amass its research," a Saudi official told the *New York Times*.

If Obama's marathon diplomatic outreach to Iran has achieved its goal, the effort to convince everyone else of the deal's merits is just getting started. His message to Iran's Gulf enemies like Saudi Arabia, Bahrain and Kuwait is that there is no good alternative to diplomacy with the Islamic Republic. "The President said you can't put your head in the sand and pretend that Iran doesn't play a role in every single important conflict in the region," says one Administration official involved in the diplomacy with Iran's neighbors. "There can't be a solution without them."

More immediately, the deal faces a huge test back home. The Republican chairman of the Senate Foreign Relations Committee, Bob Corker of Tennessee, says he will hold multiple hearings on the deal, after he and others read the classified annexes he says are crucial to understanding it. Corker helped the Administration keep the talks on track last winter but says he is skeptical the deal "actually meets the goal of preventing

Iran from obtaining a nuclear weapon." Then, during the long August recess, both sides will take the fight out into the country. Most of the 16 GOP candidates running for President will oppose the deal, which will put additional pressure on Republicans in Congress. "Opponents of the deal are going to marshal tens of millions of dollars to oppose this thing," says one senior Administration official.

If Obama can sustain a veto in the face of a congressional effort to block the deal, the question is what happens then. Iran's hard-liners appear to have accepted the agreement, after Khamenei endorsed it in a tweet. In private, Obama's diplomatic team admits the deal may just push the problem of Iran's nuclear status down the road 10 years. But in the meantime, they hope, progress can be made toward bringing Iran further into the international mainstream. Perhaps Iran's pro-Western youth and moderate political leaders can change the country in that time. Even if that doesn't happen, Administration officials say, at least the big, insurmountable disagreement between Iran and the rest of the world will be off the table, clearing the way for diplomacy on other fronts, like Syria, Yemen and Iraq.

Most of all, they say there is no other viable choice, since walking away from a deal would make an Iranian dash for a bomb more likely. If getting breathing room for diplomacy and increased monitoring of Iran's nuclear program means giving it a little more power regionally, for the Administration, it's a risk worth taking. "That may sound like a big gamble, except when compared to the alternative, which is not stopping Iran from crossing the nuclear threshold and over-turning the current order as a nuclear weapons state," says the senior Administration official.

And as a final fail-safe, Obama says that if the IAEA finds Iran has broken the terms over the next decade, the big-power sanctions can "snap back" into place. That process is untested, and somewhat vague in the deal. More important, after 10 years, Iran can again approach the verge of nuclear-power status without asking anyone's permission. At that point, Iran may be a very different kind of regional power—for better or worse. —WITH REPORTING BY KAY ARMIN SERJOIE/TEHRAN AND ZEKE MILLER AND MAYA RHODAN/WASHINGTON ◻

## FORUM

# Grand achievement, big gamble?

## Iran will cheat. What then?

There are some very important achievements in the agreement, but there are also some important weaknesses. Given Iran's track record, it will likely cheat along the margins to test the means of verification and see how it might be able to change the baseline—and there needs to be a penalty for each such act of noncompliance, preferably not only by the U.S. Deterrence is going to be even more important. Indeed, for me the greatest single problem with the agreement is that Iran is going to be left as a threshold nuclear state at the end of 15 years. The agreement requires Iran to dismantle none of its enrichment infrastructure, and starting in Year 15, it can have as large a nuclear program as it wants. The gap between threshold and weapons status is small and will not take long to bridge. As such, deterrence is what will matter. Iran must have no doubts that if we see it moving toward a weapon, that would trigger the use of force. Declaring that is a must, even now.

—**Dennis Ross**, former adviser to U.S. Presidents George H.W. Bush and Bill Clinton and Secretary of State Hillary Clinton



Mohammad Javad Zarif and John Kerry shake on the deal

## 'The nuclear accord is part of a historic geopolitical shift.'

ROBERT D. KAPLAN, author of *The Revenge of Geography*

## Constant vigilance

The key to this deal, indeed the key to any arms-control deal, is in the inspection and verification protocol. The most important question Congress will ask will be whether the inspectors can visit any site, talk to anybody and review any document. Vigilance is the only thing that will ensure this deal is a success.

—**Leon Panetta**, former director of the CIA and former U.S. Secretary of Defense

## An Iranian identity

My primary emotion regarding Iran since 1979 has been embarrassment—and shame. When I was growing up in Pittsburgh, my name marked me as a permanent foreigner—and a spokesman for a country that I barely knew. The ideal representative would have been my father, but he left when I was a baby (and ran for President of Iran in 1980). My country was the U.S., where I was born and raised, and where I felt like I didn't belong. One's identity is cobbled together, including by the perception of others, which for me was that of an outsider. Of all an outsider's problems, the greatest might be the invitation one day to be an insider. Thus my discombobulation with an accord, and smiles all around. My familiar home of enmity appears to have been taken away. All that remains now is a reckoning of the last 36 years.

—**Said Sayrafiezadeh**, memoirist in New York City

## Congress must see it through

As President Obama said, "This deal is not built on trust. It's built on verification." There are a number of procedures in place to make sure Iran follows the terms of the agreement. I welcome the discussion in Congress about the agreement. The American people need to understand this—the more they understand the agreement, the more they will understand its importance. The best thing would be to have this discussion, not to make instant judgments. There should never be any question about the U.S.'s dedication to Israel's security.

When the next President is elected, I hope that she will be in a position to make sure the deal is carried out. We haven't had a relationship with Iran since 1979. This agreement offers the opportunity to look at other parts of a bilateral relationship. It's a fascinating and complicated time in international policy. The nuclear agreement is one part of it, and a very important one.

—**Madeline Albright**, former U.S. Secretary of State

## 'The deal gives Iran a chance to become an economic superpower.'

ROBERT W. JORDAN, former U.S. ambassador to Saudi Arabia

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*Vicki Rokhlin, 28, pictured in her New York City apartment, froze her eggs this year. She plans on having them fertilized and implanted later in life when she's ready to have children*

PHOTOGRAPH BY JEN DAVIS FOR TIME



A photograph of a living room interior. A bright pink sofa is in the foreground. On the wall behind it are three framed artworks: a small poster on the left, a colorful abstract painting in the center, and a vintage-style sign on the right that reads "DIVIETO DI CACCI".

More women  
are counting on  
egg freezing to  
prolong their  
fertility. But is  
science really  
on their side?

# *Buying Time*

By Charlotte Alter

**YOU COULD THINK** of a human egg as a tiny bubble of hope. Just a single cell full of liquid, less than half the size of this comma, it contains the DNA of your parents and their parents, your children and their children. It's a world-in-waiting, a fragile bud of human potential. And, as with all not-quite-realized things, its chief enemy is time.

Egg quality and quantity deteriorate with age, and they are vulnerable to attacks on the body. That's why, for more than 20 years, doctors have frozen eggs for cancer patients who want to have kids after chemotherapy and others with medical conditions that could impair fertility. But since 2012, when the American Society for Reproductive Medicine (ASRM) lifted the "experimental" label on egg freezing after a new quick-freeze method was developed, elective egg freezing has taken off.

The process has been hailed as a game changer for millennial women—a generation who grew up watching their mothers fret about "having it all" but who feel secure in the assumption that any problem can be hacked with the right technology. For them,

egg freezing promises to solve the problem of the biological clock and complete the work of the sexual revolution. While contraception allowed women to avoid becoming young mothers, egg freezing could allow them to become older ones. It's a hopeful message for women looking over the fertility cliff, one that egg-freezing evangelists are glad to deliver. Freezing, women are told, is a fountain of youth.

Like most such promises, it doesn't quite deliver. Some women will take home babies from their frozen eggs, but many won't. And for a procedure pitched to anxious women as an "insurance policy," there is shockingly little data on exactly what their chances are.

But with the recent corporate embrace of egg freezing for employees—Apple and Facebook announced last year that they'll be covering the procedure—this new subset of the already robust fertility industry is growing fast, even if the data haven't quite caught up with the excitement. Gatherings hosted by EggBanxx, a New York City–based fertility startup that acts as a broker for egg-freezing services, feature wine, hors d'oeuvres and a panel of doctors discussing "special discounts" and "financing options" for patients who buy procedures through their company. Egg freezing can cost \$10,000 to \$15,000 and is not covered by most health care plans.

So far, EggBanxx is the only fertility marketplace to include an explicit focus on egg freezing. In March, its parent company, Fertility Authority, combined with another company to form Progyny, an online network through which patients can pick fertility doctors, clinics and procedures. Progyny is privately held and is funded in part by Merck Serono Ventures. (MS Ventures is the strategic corporate-venture arm of the biopharmaceutical division of Merck KGaA, which makes three major fertility drugs.)

For every woman who freezes her eggs, EggBanxx gets a cut. Founder and CEO Gina Bartasi, who is now running Progyny, calls it "Uber for the fertility industry" because it aims to seamlessly connect patients with medical providers. She estimates that by 2018, 76,000 U.S. women will freeze their eggs every year. "Freezing your eggs is the biggest breakthrough in women's health

since the birth control pill," she says.

But the Pill has been proved to be more than 90% effective over 50 years—egg freezing, not so much. Even though it's been done experimentally for years, the elective procedure is so new that there are no published national live-birth rates, although doctors say they're similar to those for in vitro fertilization—around 40% for women under 35, dropping to less than 5% after 42. But the data is still murky: there are simply not enough births yet to indicate egg freezing is anything close to a sure thing.

Nonetheless, for some young women, the potential benefits are irresistible. Vicki Rokhlin, a 28-year-old who works in advertising tech in New York City, got 19 eggs retrieved this year, not through EggBanxx. "I just don't want to suffer any consequences for being ambitious in my 20s," she says. She said the decision made her feel both accomplished and secure, similar to how her friends felt when they got engaged or married. "I feel that same relief," she says. "Right after the surgery was over, I just thought, Wow, I've got an entire chunk of my life figured out. And I did it. No man did it, just me."

The psychological effects of egg freezing are striking. Almost all the women interviewed for this article agreed that preserving their eggs gave them a sense of control, time to focus on their careers, a release from the constant ticktock in the back of their minds. The only thing it hasn't given them—and isn't guaranteed to—is a baby.

**WOMEN ARE GETTING** married and having children later than ever, but our bodies are just the same as they've always been: we are born with all the eggs we'll

ever have (approximately 1 million to 2 million) and we lose them steadily as we age. Quantity aside, egg quality also diminishes with time, which means there's an increased risk of chromosomal abnormalities in older eggs that can lead to miscarriages or birth defects. While studies vary on the rate of decline, all major medical organizations agree that it gets significantly harder for women to get pregnant and carry to term as they approach 40.

Yet later motherhood is becoming the new norm. One in seven American children is born to a mother over 35, a 64% increase since 1990. From 2000 to 2012, first births to mothers 40 to 44 rose 35%, according to the Centers for Disease Control. And among the highly educated, affluent women who can afford to freeze their eggs, there is a growing stigma around settling down too early, especially if they're building a career. That leaves women in a tight squeeze: having children too early can seem irresponsible, but having them too late may be impossible. It's a prisoner's dilemma, and egg freezing can seem like a get-out-of-jail-free card.

But what seems like an easy fix is not necessarily a simple procedure. Freezing your eggs is basically like pressing pause in the middle of an IVF cycle, allowing the patient to serve as her own future egg donor. After using fertility drugs to stimulate the follicles, doctors extract the eggs and flash-freeze them to store for later use. The patient returns to get her eggs thawed when she wants to get pregnant, and from that point on the procedure is just like IVF: the eggs are fertilized with sperm to create embryos and then transferred to the uterus in the hope of starting a pregnancy.

Doctors say that freezing your eggs preserves the IVF success rate at the age at which you froze them. Frozen eggs seem to behave like fresh ones, and initial studies show no increased risk of birth defects. "It's comparable to IVF, and it's safe," says Dr. Jamie Grifo of the New York University Fertility Center. "And the age at which you freeze your eggs is what determines the chromosomal-abnormality rate."

But fertility also depends on the age of the mother's body. It could still be difficult for a woman in her 40s to get pregnant and carry a child, even using an egg she froze in her 30s, because older mothers have a higher risk of pregnancy-related

**Those are  
the most  
comprehensive  
live-birth rates  
for egg freezing,  
and they're just  
under 24%**





*Potential egg freezers chat, drink and mingle with fertility specialists at a promotional event*

health problems. And although the comparison to IVF sounds promising, IVF itself is hardly a foolproof procedure—even in younger women, most embryo transfers don't result in a live birth.

The Society for Assisted Reproductive Technology (SART), the primary medical organization of assisted reproduction, is only just starting to track egg freezes, thaws and live births, but the vast majority of patients have not yet returned to thaw their eggs. To date, there has been no widespread, definitive research published on the number of women who take home babies from their own frozen eggs. Instead, success rates are cobbled together from data on IVF procedures (usually done with a woman's own fresh eggs) or egg donations (often from women in their early 20s). This allows for inconsistent standards in reporting births, and doctors aren't always fully transparent with patients about the lack of data.

Initial numbers compiled exclusively for TIME by Dr. Kevin Doody, chairman of the SART Registry from 2012 to 2014, offer the most concrete picture so far, since more than 90% of fertility clinics report their data to SART. According to

Doody, egg-freezing cycles have multiplied tenfold in the past five years, from just over 500 in 2009 to just under 5,000 in 2013. Thaws have nearly quadrupled, from 123 in 2009 to 414 in 2013.

But of the women who thaw their eggs, only a small portion end up carrying a child to term. Of the 353 egg-thaw cycles in 2012, only 83 resulted in a live birth. After 414 thaws in 2013, 99 babies were born. Those are the most comprehensive live-birth rates for egg freezing, and they're just under 24%. It should be noted that some of these eggs may have been frozen with an older slow-freeze method, which has a much lower success rate. Still the odds are not great.

But some patients are still under the misconception that 20 frozen eggs equals 20 future babies. Ivy, a 39-year-old writer in Toronto, says she was already well into her egg-freezing process before her doctors told her that even if they retrieved

20 eggs, she might only get one or two live births. "It felt like that information, which was very critical, had not been fully revealed to me until that point," she said. "The calculus hadn't been done in advance, and perhaps if they do that, they're not going to reel in as many customers." (Ivy asked that her full name not be used, for fear of jeopardizing her relationship with the clinic storing her frozen eggs.)

"A lot of these clinics massage their data," says Dr. Mary Jane Minkin, an ob-gyn who teaches obstetrics at Yale School of Medicine. "All of this stuff is a gamble, and I would certainly hate like heck to have anybody count on this as an absolute guarantee."

**BUT MANY WOMEN** do think of egg freezing as a guarantee, partly because of the "insurance policy" marketing rhetoric. It helps that women want to believe that it will work. The appeal is as much about feminism as it is about fertility: for a generation of women who feel they can control everything but their biology, freezing their eggs seems like a way to shatter the last gender barrier.

That wishful thinking is reinforced

by corporate endorsement of egg freezing for employees. Other companies may soon follow Apple and Facebook's lead. Progyny is entering the corporate health-benefits space, and Bartasi says over the past three months she's fielded over a dozen requests from other tech companies that want to cover egg freezing to help recruit talented women.

And the message is spreading. Bay Area fertility specialist Dr. Aimee Eyvazzadeh started hosting egg-freezing parties in November in order to "raise fertility awareness"—now she gets requests to host soirées everywhere from Washington, D.C., to Denmark. The parties feature wine, snacks, goody bags and a PowerPoint presentation by "Dr. Aimee," a bubbly 39-year-old reproductive endocrinologist who wears bright lipstick and an "Egg-Whisperer" shirt. Everyone leaves with a T-shirt, a tote bag and a tiny bar of soap in the shape of an egg, and Eyvazzadeh says she pays for everything out of pocket.

"It's Fertility 101, in a Ladies Night format," Eyvazzadeh says. As part of her awareness platform, she encourages women to get regular FSH tests, which measure the level of the follicle-stimulating hormone and can help women learn how fast their ovaries are aging. "If I can talk to those women today who might be in my office in 10 years, that's why I'm spending this money," she says, adding that she tries to dissuade patients from thinking of egg freezing as a sure thing. "It's a chance. That's all it is."

The chance is enough for some women. "For me it all came down to knowing that if and when I reached the point where I was ready to have children, I had done everything that I could," says MeiMei Fox, a 42-year-old writer in Los Angeles who froze her eggs at 37 after a divorce. "If it didn't work out, so be it."

Some women see it as just another chore of modern womanhood. "There's almost a 'check the box' attitude about it: I got my teeth cleaned, I filed my taxes, I froze my eggs," says Sarah Elizabeth Richards, author of *Motherhood, Rescheduled*, a book about four egg-freezing experiences, including her own. "Protecting your fertility is just one more aspect of being a successful woman. Almost like taking out an IRA."

Most of the women at egg-freezing

## Fertility on ice

Here's the process women go through to preserve eggs for later use

### HORMONES

The patient gives herself daily hormone injections for about two weeks to stimulate egg production

**Cost:** \$2,500–\$5,000

### RETRIEVAL

The doctor extracts 5 to 25 eggs via a needle that goes through the vagina and into the ovaries

**Cost:** \$6,000–\$12,000

### FREEZE

Harvested eggs are preserved in a quick-freeze process known as vitrification, then stored indefinitely

**Cost:** Storage fees are \$500–\$1,000 per year

### THAW

When the patient decides to get pregnant, the eggs are retrieved from storage and thawed

**Eggs that survive the thaw:**  
75%–80%

### FERTILIZATION & TRANSFER

A doctor fertilizes thawed eggs with sperm to create embryos, tests them and implants them in the uterus

**Cost:** \$3,000–\$6,000

### POTENTIAL PREGNANCY

A few weeks later, the patient takes a pregnancy test to see if the embryo has attached to the uterine lining, resulting in a pregnancy

**Success rate:** Of all the egg thaws in 2012 and 2013, 24% resulted in a live birth

COST ESTIMATES COURTESY OF EGGBANXX

parties are in their mid-to-late 30s and already worried about their fertility, but EggBanxx wants to get women to freeze when they're younger, ideally in their late 20s. The company has adopted a deliberate marketing strategy to reach young women through social media, and it recently launched a mobile platform so that paying for egg freezing is as easy as buying a Groupon. The average age of EggBanxx attendees has dropped from 38 to 33 in the past year.

And yet when doctors at EggBanxx events are asked about live-birth rates, most hedge their answers by quoting IVF success rates or egg-donation data. When asked how many babies have been born from eggs they've frozen, few quote a number above two or three. "When doctors stand up in the room and say, 'Well, well, well,' it's because they don't have the data," EggBanxx founder Bartasi acknowledges.

Still, the consensus is that if you're going to freeze, younger is better, which is why Rokhlin put her eggs on ice while still in her 20s. "I'm doing this now so that I'm not 34 wanting to have kids and putting so much pressure on my body," she says. "I really believe this will start being a gift which parents give to their daughters when they graduate college, so that they don't feel this cataclysmic pressure to follow a timeline."

That's what EggBanxx is hoping. "In the next couple of generations, if you're 30 and professional, you'll just do this as an insurance policy, just like you have life insurance and health insurance and homeowner's insurance," Bartasi says.

But even doctors who recommend the procedure—and profit from it—reject that description. "As an insurance policy goes, it's not a great one," says Grifo of NYU. "When your house burns down, you get a new house, you don't get 40% of a new house." Grifo is one of the leaders in the field: in a decade of freezing, about 85 babies have been born from eggs frozen at Grifo's clinic, and more than 30 pregnancies are ongoing.

If doctors are trying to manage expectations, some women who have tried multiple rounds of IVF are downright skeptical. "There is unfortunately a real growth industry here around those who see dollars and not necessarily babies," says Pamela Tsigidinos, an infertility blogger



and the author of *Silent Sorority*, who attempted five IVF cycles with fresh eggs. “You don’t see women on stage like me talking about the absolute heartbreak,” she says. “The doctors keep telling you your eggs and embryos look fabulous, and then you’re left sitting in the dark room with the phone and someone has just told you you’re not pregnant.”

**AS WITH ANY** medical procedure, there are risks associated with egg freezing. Rokhlin got ovarian torsions after her egg retrieval, a condition in which her ovaries twisted and swelled to the size of grapefruits. She had to go to the ER and get her ovaries drained with what she calls a “shish-kebab-size needle.” That happens to fewer than 1% of egg-retrieval patients, but there is a danger of ovarian hyperstimulation and other side effects.

After they’re retrieved, the eggs are frozen using a relatively new process known as vitrification, which flash-freezes the egg to keep it intact. Then they’re stored in liquid nitrogen for as long as the patient wants, or for as long as she can afford to pay the storage fees, which can be up to \$1,000 a year. But there are risks to leaving your frozen eggs in a storage facility as well, and if you move away, shipping your eggs can be disastrous. Fox attempted to thaw her eggs 2½ years after she froze them, but they were accidentally destroyed in transit (which is relatively rare). She said it was one of the worst days of her life.

Although anecdotal evidence suggests eggs can be frozen indefinitely without any adverse effects, there are not yet any large studies proving how long they can stay frozen. And eggs can’t be tested for genetic abnormalities until they’re in the blastocyst phase—a fertilized but pre-embryonic stage—which is another hitch in the plan for egg freezers. While genetic testing of unfertilized eggs is technically possible, it’s far too expensive to become part of the regular procedure in the U.S. But to freeze eggs without testing them is a big gamble, since even young women have a large proportion of chromosomally flawed eggs, and that number just increases with age. That means there’s a good chance women could be freezing—and pinning their hopes on—bad eggs.

Rokhlin says the promise of genetic testing of embryos is what sold her on egg

freezing in the first place. “I went into egg freezing thinking it would only buy me time. But actually it’s the guarantee of a healthy child that made me pull the trigger,” she says. “For me, it’s not an insurance policy. It’s Plan A.”

There is no such certainty, say many doctors. “People are being set up to believe that if you freeze an egg, it’s going to give you an assurance of having a baby down the line,” says Dr. Geoffrey Sher, who runs Sher Fertility. “But if you don’t know that egg is genetically normal, you may be giving people a false promise.”

At every step of the process, a few eggs are lost. Of all the eggs extracted, only some are healthy enough to be frozen. (Five of Rokhlin’s eggs were not deemed viable.) Of all the eggs that are frozen, only 75% to 80% make it through the thaw. Of all the eggs that are thawed, only a portion make it to the blastocyst phase, and only a portion of those are deemed genetically healthy enough to transfer to the womb. And of the healthy embryos transferred, only some will survive to a live birth, especially if the mother is older. The ASRM estimates that even in women under 38, each egg has just a 2% to 12% chance of resulting in a live birth.

For Rokhlin, her frozen eggs feel like a brood just waiting to be born. “A girlfriend of mine sent me a ‘Happy Mother’s Day’ note,” she says. “She said, ‘Congratulations to the most heroic mother of all for sacrificing so much for your 19 little babies.’”

All this might explain why, when it removed the “experimental” label from egg freezing in 2012, the ASRM also warned against elective egg freezing: “Marketing this technology for the purpose of deferring childbearing may give women false hope.”

**‘I just don’t want to suffer any consequences for being ambitious in my 20s.’**

—Vicki Rokhlin, 28

**FOR MANY WOMEN**, freezing their eggs is as much about fear as it is about hope. Fear that they won’t find the right partner, fear that prioritizing pregnancy could have consequences at work, fear that their fertility will suddenly plummet. Even for women who know there’s only a small chance their frozen egg will become a baby, that chance is better than nothing. For them, freezing their eggs is as much a way to find peace of mind in the short term as it is about a future family.

“I do think it’s easy to buy into the dream of ‘Oh my god, all I have to do is sign here and give you \$15,000,’” says Danielle, an EggBanxxx attendee who asked that her full name not be used because she doesn’t want her fertility decision to impact her dating life. “If you talk to a bunch of women in their 30s, all they really want is to not be having this problem. It’s an easy sell.”

That feeling of security can be beneficial even if a baby never materializes. “Even though it didn’t work for all women, I think most women live their lives assuming it will work, so they live those years without so much pressure,” says Richards, who hasn’t tried to thaw her eggs in the two years since she published *Motherhood, Rescheduled*. “They still got the psychological benefit of assuming it would work.”

But that very benefit, the idea that childbearing can be postponed without risk, can also have devastating outcomes. If a woman waits until her 40s to thaw her eggs, the frozen eggs could be her last shot to have her own biological child. And unlike IVF cycles in younger women, a finite number of frozen eggs means a finite number of chances at fertilization and implantation: if it doesn’t work, that’s it.

That’s why Minkin thinks the much discussed peace of mind amounts to a false sense of security. “If they’re going to rely on this as something that’s definitive, then they’re going to say, ‘Okay, I don’t have to worry about this,’” she says. “And then find out 15 years from now that those eggs are totally unusable.”

At a recent EggBanxxx event in New York, a former patient told the crowd freezing her eggs helped her feel empowered, secure and in control. Danielle was not impressed. “I thought she was going to be like, ‘It worked for me,’” she says. “I was waiting for that part of the story.”

# Blood Will Tell

**ALONG WITH THE HISS** of a blood-pressure cuff and sticking out your tongue, the needle stick of a blood draw is a familiar part of a doctor visit. And for good reason: a vial of blood can give your physician a real-time look at how much cholesterol you have circulating in your blood vessels, for instance, or which vitamins and hormones you have in good or not-so-good supply.

But now it turns out that that's just a sliver of the volumes of medical information hidden in human blood. Researchers are discovering that each of us walks around with

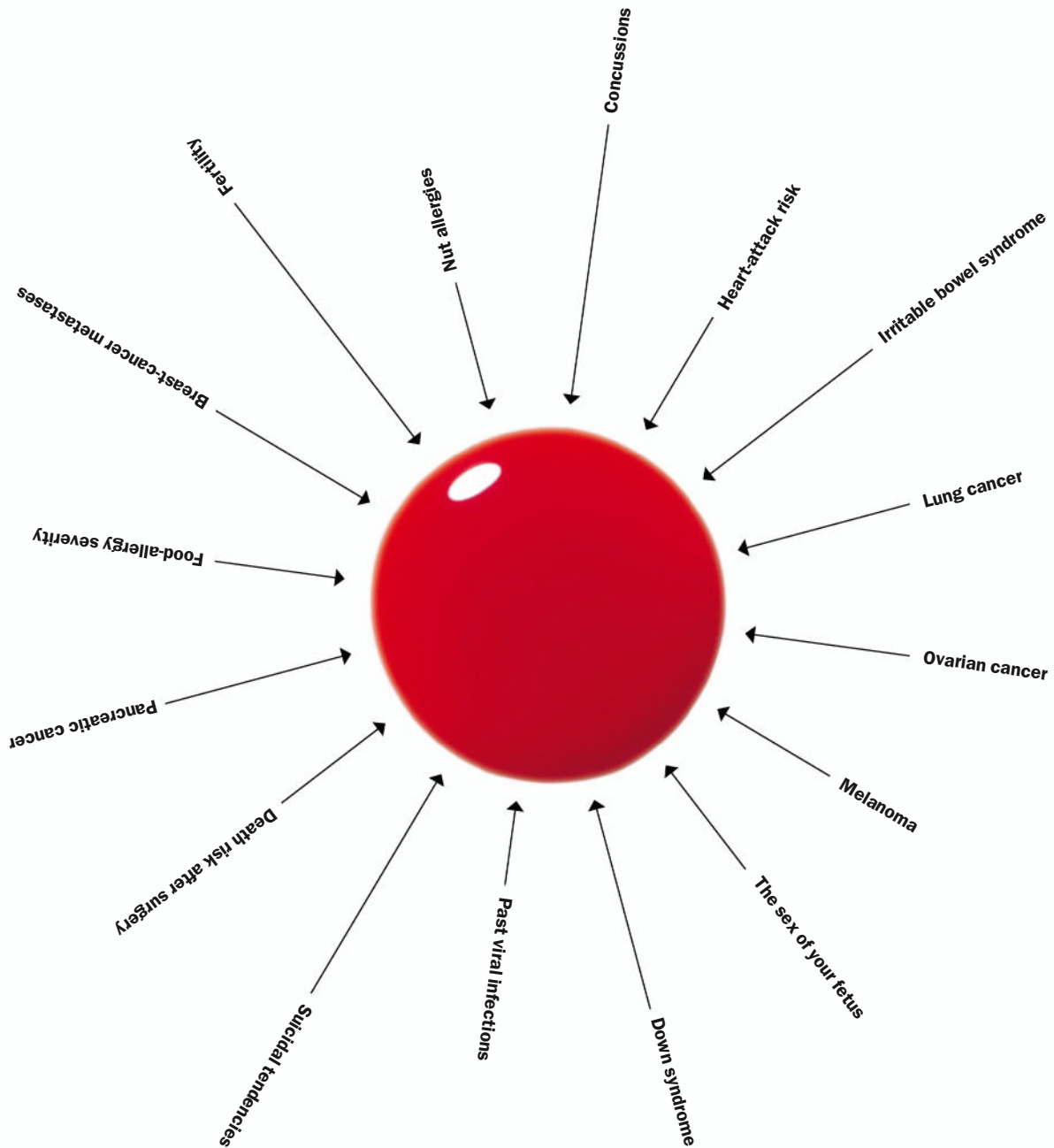
New advances have  
scientists banking  
on the idea that  
the most revealing  
diagnostic medical  
test will be a single  
drop of your own  
blood

By Alice Park

1.5 gal. (5.7 L) of what may be the most sophisticated and revealing diagnostic available. Each drop teems with data, not just about your current state of health but also about what your future might hold.

The breadth of blood-detectable conditions is exploding thanks to the latest technologies. As doctors get better at understanding what goes wrong at the molecular level when we get sick, they can better pick out specific compounds in human plasma—the component that holds all the blood cells—that signal the first stages of trouble.





**These are some of the many conditions and characteristics  
that may soon be detected with a simple blood test**

“There’s a data set in blood that is 10 times—even 100 times—more interesting than that in the genome,” says Dr. Eugene Chan, CEO and founder of DNA Medicine Institute, a biomedical product-development company that is creating a one-drop-tells-all blood test that will scan for everything from Alzheimer’s to multiple sclerosis and cancer.

Chan’s work is part of an effort that is under way by scientists and entrepreneurs across the country to tap blood’s huge potential for indicating what illnesses may be lurking in the body. In the near future, Chan thinks, a blood test may be able to detect early breast cancer more reliably than a mammogram; it might even alert doctors to the first signs of Alzheimer’s, making it possible to intervene before toxic changes ravage the brain.

Success will mean a transformation in medicine as blood tests reveal things that have until now required invasive surgery or radiation imaging. Blood’s advantages are obvious: it’s easy to access, it’s inexpensive to test, and nearly every doctor’s office or clinic can draw a tube of it. It’s no surprise that the market for immediate-gratification diagnostic tests, including blood-based ones, could grow by nearly 10% each year, to reach an estimated \$27.5 billion by 2018. Health care entrepreneurs are jumping on the bandwagon, developing commercial tests that promise—with limited proof so far—a tell-all diagnostic blood scan.

There are challenges to overcome before that payoff. The same qualities that make blood’s information so promising also make it challenging to exploit. It’s a case of almost too much information. Teasing out specific markers for illness—let alone interpreting them with any accuracy—is a tedious and,

until recently, nearly impossible task.

But a growing database of the molecular fingerprints of diseases’ proteins, enzymes and other compounds is making it easier to sort the more significant data from less useful information. In June, researchers at Brigham and Women’s Hospital announced that they had found a way to detect thousands of viruses—and every viral infection a person had—from a drop of blood in just seconds.

“It’s both the best fluid to work with and also one of the more complicated ones to study,” says Dr. Robert Siman, professor of neurosurgery at the University of Pennsylvania. Which means the big questions now are: How quickly can science unlock the secrets of our blood? And once that happens, what’s the best way to make use of everything those tests can tell us?

**CANCER TESTING IS PROVIDING** some of the most enticing hope for decoding blood. As it stands, detecting cancerous tumors relies on rather crude methods—people are supposed to literally feel or look for lumps or lesions in the case of breast and skin cancers, for example. By the time the cancer is visible or detectable to the touch, the disease is often far along and harder to treat.

Scans, meanwhile, can pick up smaller growths, but they require regular follow-ups and aren’t completely reliable either. A spate of new studies about mammography found that women who undergo routine screening are not less likely to die of the disease than those who forgo the scans. And though the most common kind of prostate-cancer test already relies on a blood sample, this older technology measures levels of a protein that often rise when either tumors or benign growths take hold in the organ—so it is

not sophisticated enough to pick out markers for aggressive cancers from the kind that don’t require treatment.

New blood tests, in contrast, would function more as a liquid biopsy. One approach is to home in on genetic fragments that are overactive in tumor cells and shed into the blood, and connect them to molecules of silver, similar to the way that images in a photograph are developed. Doctors would then be alerted to the presence of malignant cells. In the case of prostate cancer, only the genetic signatures associated with aggressive, need-to-treat tumors would be flagged.

Sounds simple, but in practice, it’s incredibly intricate. Cancer cells arise from normal cells that have developed mutations, so these aberrant snippets of tumor DNA aren’t easy to distinguish from normal genetic material. “You’re looking for a needle in a haystack,” says Dr. Max Diehn, a radiation oncologist at Stanford University who is mining blood for early signs of lung cancer.

These strategies also depend on knowing what you’re looking for. And that is where blood testing can benefit from an explosion of research that’s uncovering both gene- and protein-based markers linked to diseases that go beyond cancer.

At Stanford, researchers have narrowed down Alzheimer’s markers to a half-dozen blood proteins that signal a buildup of the disease’s hallmark amyloid plaques in the brain, while at the University of California, Los Angeles, Dr. Liana Apostolova is developing a similar test. “This blood test is less invasive than a lumbar puncture to study spinal fluid. And it doesn’t have radiation like PET scans, which are the only other ways to look for the disease,” she says.

There are currently no therapies to halt the gradual decline in cognitive

## A brief history of blood breakthroughs

**1628**

Scientists learn that blood is pumped by the heart through the body



**1658**

Jan Swammerdam, a Dutch scientist, observes red blood cells under a microscope



**1818**

Scientists perform the first recorded human-to-human blood transfusion



**1901**

Karl Landsteiner, a Nobel laureate, discovers the three main human blood types



functions from Alzheimer's, but knowing that the disease has taken hold can help patients plan for when they will be more debilitated by the condition, Apostolova says. It's also important to be ready with a reliable and sensitive blood test for when treatment breakthroughs do occur, since blood can be a useful way to monitor how well patients respond to those therapies.

Blood testing holds similar potential for people with rheumatoid arthritis (RA), an immune-triggered disorder that causes painful inflammation in the joints and can severely restrict movement. Traditional blood tests for inflammation—a hallmark characteristic of RA and other autoimmune diseases—aren't especially helpful, since inflammatory markers can also be a sign that the patient has a cold or some other condition the immune system is fighting.

Scientists at Crescendo Bioscience, a San Francisco company developing a number of blood-based diagnostics for such diseases, have developed a test that looks at a dozen blood markers for RA and can rank patients' inflammation as mild, moderate or severe. This is critical because treating early inflammation is key to preserving joints and preventing more serious damage, which can result in disability and a lifelong reliance on side-effect-heavy prescription drugs or multiple surgeries or both.

**BRAIN TRAUMA** is another promising area of research. Researchers foresee a day when an athletic coach could assess a player's head injury in real time. Team doctors could draw blood to determine if it's safe for the player to get back in the game. Experts are looking at total tau and SNTF, for example—two proteins that tend to spike in the hour or

## Testing blood without a needle

**There's good news for needle-phobic patients: scientists are discovering other, less invasive ways to see what's going on inside the body—using tools such as light, lasers and fiber optics—without drawing blood.**

Researchers are now taking advantage of growing knowledge about how compounds like glucose absorb wavelengths of infrared light, for instance, and using lasers to read them. A team at Princeton found a way to shine beams on people's palms to get a relatively accurate reading of their blood-glucose levels, which could eventually spare diabetic patients frequent finger pricks.

Light is also being co-opted to help treat disease. Photodynamic therapy relies on a drug that can be "activated" when exposed to specific wavelengths of light, making it ideal for treating tumors on the surface of organs or those on the skin.

Finally, borrowing from the world of miniature electronics, researchers are devising ways to use ultra-fine glass or plastic fiber optics to provide constant feedback on body readings, from things as simple as temperature to the presence of blood gases such as oxygen, carbon dioxide and more.

**It may not be long before needles will be a thing of the past—for some tests, anyway.**

so after a concussion. Studies show that peak levels of total tau correlate with how many days the person experiences symptoms such as dizziness, nausea and memory problems. And SNTF may be a good barometer for serious structural damage to the brain. It was tested in a small number of head-injury patients at Houston hospitals in 2013. Compared with a healthy group of controls, the patients who had elevated SNTF had cognitive issues that persisted for months after the blow.

About 20% of patients with brain injuries experience continual deficits in thinking and other functions. If blood tests can help identify this minority, it could mean the difference between early treatment and serious problems that develop and worsen over time.

All of this begs the question: How much do you really want to know? This is something patients will soon confront as they are offered the option of knowing their future risk of cancer, Alzheimer's or other conditions. For some it may be welcome information, while for others it may bring only uncertainty and anxiety.

Most researchers say the prospects for better care make the growth of blood testing both inevitable and worthwhile. It isn't just the benefit to individual patients. If a blood test can help reveal whether a drug is working, for instance, it can lead to more effective care for everyone. "We can start to understand why some patients don't respond to conventional treatments," says Dr. Chad Mirkin, a professor of chemistry at Northwestern University who developed the so-called liquid biopsy that lights up when cancer cells are present.

There's no question our blood has a lot to tell us about our health—we just have to get better at reading what it has to say.

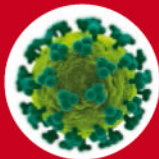
**1906**

The first blood test for syphilis, called the Wassermann test, is developed



**1970**

The blood-glucose meter is invented, changing diabetes care



**1985**

The first commercial blood test for HIV is approved by the FDA

**2002**

The hs-CRP test, which measures inflammation, becomes commercially available



**Today**

Scientists can now test for some diseases from a single drop of blood

# The Bank of Bob (and Bill and Nancy and Lisa)

*How peer-to-peer lending is changing the way we borrow money*

*By Sean Gregory*

TIRED OF SHARING A SINGLE BATHROOM with his teenage son, Sean Rosas hatched a plan. He would rent out their San Francisco house for a premium thanks to the Bay Area's booming real estate market and use the extra income to help pay for a bigger place. But attracting renters would require renovating their broken-down bathroom—and a project like that would cost more than what Rosas, the director of volunteer services at a nonprofit, had on hand. Tapping his credit card would mean paying high interest rates, while going to a bank for a loan could take weeks without any guarantee that he would be approved in the end.

That's when Rosas, 43, stumbled on Lending Club, a website that matches borrowers directly with individual lenders. If you need a loan, the site pulls up your credit score, vets your application

within minutes and assigns an interest rate. If enough people sign up to lend, you can get the money in days. More than 250 people chose to back Rosas, giving him a three-year, \$16,000 loan at 8.9% annual interest. Rosas, who has made every monthly payment so far, is thrilled with his deal. "It was a much more human experience than if I had gone to a faceless bank," he says.

Which is precisely what Silicon Valley wants you to think. Over the past decade, these kinds of loans—known as peer-to-peer lending—have evolved from a novel idea to an estimated \$9 billion industry set on upending the way consumers borrow. Well-funded startups like Lending Club and Prosper function as digital middlemen, connecting people who want to lend money for profit with people who need to borrow it. Their pitch: expect



**THE WAY MARKETPLACE LENDING WORKS**

The illustration depicts a man wearing a cap and a t-shirt labeled "PEER" standing on a roof. Above him is a large map of the United States, which is the background for numerous hands reaching out, each holding a dollar bill and labeled "PEER". These hands represent lenders. A large sack filled with dollar bills sits on the roof, with a red arrow pointing down from it towards a man in a suit below. The man in the suit is looking up and saying, "Hey, what about me?" and "I need to get a piece of that action." A speech bubble from the man on the roof says "Thanks!".

Key elements and labels in the diagram include:

- MONTHLY REPAYMENT**: A yellow box with an arrow pointing to the flow of money from borrowers to the platform.
- BORROWER (WITH GOOD CREDIT SCORE)**: A yellow box with an arrow pointing to the man in the suit.
- TRADITIONAL BANKER**: A yellow box with an arrow pointing to the man in the suit, who is also labeled **NOT A PEER**.
- THANKS!**: A speech bubble from the man in the suit.
- LOAN (\$1,000 to \$35,000)**: A yellow box with an arrow pointing to the sack of money.
- PEER TO PEER LENDING COMPANY TAKES 1% TO 5% OF LOAN VALUE**: A yellow box with an arrow pointing to the sack of money.
- REASON FOR LOAN**: A yellow box with an arrow pointing to the man in the suit.
- INCREMENTALS AS LOW AS \$25**: A yellow box with an arrow pointing to the flow of money from the platform to lenders.
- Thanks!**: A speech bubble from the man on the roof.

THANKS!

LOAN  
(\$1,000 to \$35,000)

PEER TO  
PEER  
LENDING  
COMPANY  
TAKES  
1% TO 5%  
OF LOAN  
VALUE

REASON  
FOR  
LOAN

MONTHLY REPAYMENT

BORROWER  
(WITH  
GOOD  
CREDIT  
SCORE)

TRADITIONAL BANKER

Hey, what about me?

I need to get a piece of that action.

INCREMENTS  
AS LOW AS  
\$25

Thanks!

lower rates than a credit card, better returns than a savings account and fewer hassles than a bank loan.

At the outset, peer-to-peer was aimed at individual lenders just as much as their borrower counterparts—one more disruptive brainstorm from the sharing economy. After all, if you'd consider renting out a room to a stranger on Airbnb, why not lend your cash the same way and rack up a profit? (The short answer: You might not get your money back.)

For all the power-to-the-people hype, the lending side of the equation is increasingly becoming the province of Big Money. Goldman Sachs, the Wall Street giant, recently said it plans to offer direct loans to everyday consumers through an app or website. Large institutional investors like hedge funds and community-bank networks are snapping up peer-to-peer loans in huge batches. And major firms such as Credit Suisse and JPMorgan Chase have invested in one of the major peer-to-peer players—at least in part because the threat to traditional retail lending is clear.

“Silicon Valley is coming,” JPMorgan Chase CEO Jamie Dimon wrote in his 2014 letter to shareholders. “They are very good at reducing the ‘pain points’ in that they can make loans in minutes, which might take banks weeks.”

But if the 2008 financial crisis taught one lesson, it's this: Beware of the hot financial product. Peer-to-peer has grown partly as a response to the recession; when credit was tight, traditional banks pulled back on lending, and consumers needed alternatives. The appeal for borrowers is straightforward. But it's more complicated for would-be lenders, who shoulder the bulk of the risk. Skeptical analysts warn that another financial downturn could lead peer-to-peer borrowers to default and lenders to pull back, creating a crippling cycle.

“This is classic creative destruction,” says Richard Bove, an analyst at Rafferty Capital Markets. “The potential opportunity in peer-to-peer lending is matched only with its staggering potential risk.”

**COMPARED WITH** a traditional loan application, Lending Club is blissfully easy. To qualify, borrowers need only an active bank account, a minimum FICO credit score of 660—the approximate subprime

cutoff point—and at least three years of credit history. A proprietary underwriting algorithm approves or rejects the loan on the spot.

On the surface, lending might seem just as simple. Prospective backers can create a Lending Club account and fund it through a bank transfer. They can choose loans to fund individually or set parameters regarding loan size and risk and let Lending Club's systems assign the funds automatically. But while it's tempting to view that activity as lending—the natural flip side of borrowing—what's actually going on is more complex. What lenders are really doing is investing: they're putting their money in notes backed by the prospective repayment of loans. The sizes of the loans range from \$1,000 to \$35,000. Investors can buy notes in increments as small as \$25—which means they can purchase small slices of lots of different loans, spreading the risk around.

The payoff: respectable investment returns. Since its founding in 2006, Lending Club has delivered investors an average annual return of 7.79%—appealing at a time when three-year Treasury bonds average 1%. “It's absurd that in an age of technology and an age of computers, people put their money in the bank and get essentially zero back,” former U.S. Treasury Secretary Larry Summers tells TIME. Summers, who is on Lending Club's board and has equity in the company, adds, “They borrow money on a credit card, and they pay 18%. Surely there's a better way.”

More and more people agree. Lending Club, which went public last year, fa-

cilitated almost \$1.3 billion in new consumer loans in the first quarter of 2015—a 268% jump over the same quarter in 2013. It took Prosper eight years to reach \$1 billion in total loans. Fifteen months later, the company passed \$4 billion. “I don't think anybody should be confused—this isn't a village coffee klatch,” says Summers. “This is a very serious business that is going to, over time, challenge some of the world's great financial institutions.”

Despite the growing involvement of big financial institutions, some see the social-network element as key to this growth. “For a prior generation, when you made financial decisions, you asked your parents or you paid some financial advisers or relied on whatever your company suggested for your 401(k),” says Heath Terry, a Goldman analyst who tracks the social-lending industry. “These are a lot of things that the current generation has really lost trust in. But they do trust their peers.”

Skeptics say it's too soon to declare the revolution. “Something tells me things are too rosy,” says Paul Christensen, a professor of finance at Northwestern's Kellogg School of Management. He points to Lending Club's and Prosper's great timing: their businesses matured as the economy recovered from the recession, and they have yet to experience a severe slump.

The risk for lender-investors is undeniable. The average percentage of Lending Club borrowers with delinquent credit history has risen steadily in the past two years, from 13% in 2012 to 20% in the first quarter of 2015, according to Compass Point, a research and trading firm. Such trends led Compass Point to put a “sell” rating on Lending Club stock. And if a borrower defaults, Lending Club still receives its up-front transaction fee of 1% to 5%—which critics say is an incentive to issue as many loans as possible.

Lending Club responds that it needs to keep defaults down to stay in business. “If investors don't have a good return, they will put their money elsewhere,” says CEO Renaud Laplanche.

On that score, Laplanche hits on a fundamental truth about the sharing economy: community may be part of the appeal, but—as with anything in the world of financial services—the point is making a profit.

**\$11 billion**

Profits that Goldman Sachs projects will shift from traditional banks to alternative lenders over the next decade



# Time Off

'LIKE WILLIAM BURROUGHS ... HE WAS A RICH YOUNG MAN WITH A REAL AND SOMETIMES UNNERVING GIFT.' —PAGE 56



*As its least noble superhero, Paul Rudd's Ant-Man brings warmth and pathos to the Marvel universe*

## MOVIES

### When small things come in great packages, *Ant-Man* wins

By John Anderson

IN ITS EFFORTS TO COLONIZE THE multiplex with heroes, Marvel Studios has gone big (Thor), bigger (Hulk), neurotic (Spider-Man), unmanicured (Wolverine) and anarchist collective (Avengers) and finally decided that less is more. Turns out it was right: *Ant-Man*, while based on a minor deity in Marvel's pantheon, is not only one of the more entertainingly human fantasies to come out of the studio, but it also defies the bedrock fanboy aesthetic that you don't want to merely watch the superhero—you want to *be* the superhero. Who wants to be a tiny little man, running through carpet nap like it was a cornfield in *North by Northwest*?

For any of *Ant-Man*'s deficiencies in the vicarious-thrills department, his movie is balanced by multilayered

performances as well as a reliance on formula—not the kind that helps our hero, ex-con cat burglar Scott Lang (Paul Rudd), shrink to insect size but the kind that gets a movie over on an audience. At no time during director Peyton Reed's concoction does a viewer feel he's not being played by a movie that's equal parts revenge tale, redemptive parable, apocalyptic thriller and cornucopia of oedipal clichés. Still, the pace of the wisecracks, pathos, CGI fireworks and scientific double-talk is highly satisfying, even comfortable. Likewise the actors selling it.

Rudd has always been a curious quantity, a team player to the point of bench sitting. Likable, popular, he's never gotten the star bump from an Apatow comedy of the kind enjoyed by Steve Carell or Seth Rogen. And in

*Ant-Man*, once again he's less than the centerpiece, being elbowed aside by the scenery-devouring Michael Douglas. As Hank Pym, the original Ant-Man, Douglas maneuvers Lang into thwarting the plans of Pym's former protégé Darren Cross (Corey Stoll), an incipient madman who plans to sell Pym's ideas to the military—or whatever nefarious interest will pay the most. Rudd brings the warmth, though, which has never been a Marvel priority.

When we first see Lang emerge from prison, he presumes that his master's degree in electrical engineering will lead to postincarceration employment. Cut to Baskin-Robbins, where he's relegated to serving numskulls and working for worse. Desperate to pay his past-due child support so he can see his daughter, he signs on

with a trio of lar-  
cenus goofballs  
who have a tip:  
inside some rich  
guy's house in San  
Francisco is a safe  
containing untold  
fortune. What  
they find isn't  
money or jewels.

It's a hybrid motorcycle suit and snorkel mask—the Ant-Man suit. The rich guy is Pym.

The origin story is always the easiest to pull off—the introduction of characters, the training montages. *Ant-Man* does it all, though Lang has his own skill set when the movie starts, which elevates him above Peter Parker-ish naiveté. He's practiced at parkour, knows technology and cracks Pym's safe with a series of innovations that are downright magical, as is Reed's direction of same.

There's also a complication with Pym's supposedly estranged daughter Hope (Evangeline Lilly), a martial-arts master and tech savant who doesn't understand why Dad won't let her put on the Ant-Man suit. Which makes her less intelligent than she seems to be. Fathers worshipping daughters is a big element in *Ant-Man*, along with sons rejecting fathers: Cross was mentored by Pym and feels abandoned; his inner turmoil is less Oprah than Aeschylus. The bonding of Lang and Pym, on the other hand, will lead to great things. And sequels.

**The origin story is always the easiest to pull off—the introduction of characters, the training montages. *Ant-Man* does it all**

## QUICK TALK

### Colin Quinn

*In Trainwreck, the new Judd Apatow-directed comedy starring Amy Schumer, Quinn plays Schumer's father as a foulmouthed, bigoted philanderer with multiple sclerosis. —ISAAC GUZMÁN*

**So is Amy Schumer's dad really as outrageous as the way you play him? In the movie, he teaches his young daughters to chant, "Monogamy isn't realistic."** Her father was this wild guy

when [she and her sister] were growing up. A nice guy but, like, a playboy—a wild boy. But he also got MS in his early 40s. So he got a real Zen attitude because of this thing that hit him out of nowhere. He's pretty open about his life. He doesn't try to sugarcoat things.

**On *Inside Amy Schumer*, the comedy is pretty cutting. How do you think it translated into a rom-com?** There's an undertone of something in the movie—I don't know if it's a bleakness—there's an undertone of brutality, of comic brutality. Judd captured that.

**You're doing another history-based one-man show with Jerry Seinfeld directing *New York Story*, which looks at the city starting with the Dutch. Why does the past appeal to you as a comedian?** Two reasons. One is, everything is history if it's a day old. And two, because I was so bad at science and math when I was growing up that I was left with no choice. It would be like talking to a third-grader if you asked me any mathematical thing.

**How do you keep up your pace of as many as 10 Twitter posts a day?**

It's a sickness, like an addiction. I have all these regulars who follow me, and they're trying to outdo each other with creative ways to tell me they hate my guts and wish I would get hit by a truck or die in a fire. You find out that all these other people are pretty funny but not as funny as they think sometimes.

## ON MY RADAR

### SOCIAL-MEDIA COMEDY POLICE

*'More and more people say, "This joke isn't appropriate." It's interesting to watch comedians deal with this stuff and still be funny.'*



RICHARD SHOTWELL—AP





Lee, shown here in 1961 at age 35, is known to friends by her first name, Nelle

## BOOKS

# Atticus Finch's racism makes Scout—and us—grow up

HARPER LEE'S BELOVED 1960 NOVEL, *To Kill a Mockingbird*, is a curious case: a book so perfect that it compels the reader to want more of Scout Finch and her family yet one whose perfection has for half a century been neatly self-contained. The publication of *Go Set a Watchman* has given readers what they've long wanted, at great cost.

*Watchman*, released this month, is a novel whose independent merits are nearly pointless to evaluate. It works best as an amplification of the characters it shares with *Mockingbird*, in which they are better developed. The new book is both a painful complication of Lee's first and a confirmation that a story read widely by schoolchildren is more bitter than sweet.

Readers will be dispirited from the first chapter, with the revelation that in the years between Scout's 1930s childhood and her return to Maycomb, Ala., at 26, her brother Jem has died and her father Atticus has grown infirm. This burst of exposition, like other moments of clumsy plotting, resonates only because the characters are already famous. A romance between Jean Louise (Scout has embraced her legal name as an adult) and a new character, Henry Clinton, is less successful yet.

But the book's most striking aspect—



## CHANGING TIMES

Atticus isn't the only character whose story has taken sad and unexpected turns in the two decades between *To Kill a Mockingbird* and *Watchman*'s 1950s-era Alabama

## SCOUT FINCH

Now using her given name, Jean Louise, she has grown up and grown out of Maycomb, building a life in New York City and leaving a would-be husband in her hometown

## JEM FINCH

We're told in the book's first pages that Jem has died prematurely; in flashbacks, we see him continuing to protect his sister as a young adult

## CALPURNIA

The Finches' black maid has retired and returned to her segregated neighborhood; a visit from Jean Louise goes poorly

and the part making headlines—is the revelation of Atticus Finch's retrograde and frankly racist views of his black clients and neighbors. Atticus, more than any other character, has stood for justice and righteousness in the American imagination. And now he's a bigot? In the context of current anxieties over the apparent lack of justice in racially charged cases, it seems too much. We need heroes in our fiction, at least.

That's why the heart of *Go Set a Watchman*, whose title is a reference to a biblical verse about the moral compass, lies both in its depiction of Jean Louise's reckoning with her father's beliefs and in the manner by which those beliefs are integrated into the Atticus we know. Atticus isn't—never was—a fighter for what is empirically right. His opinions, expressed in a debate with Jean Louise, actually square with the paternalistic attitude toward black people and the occasionally overwrought compassion for his racist white neighbors expressed in *Mockingbird*.

“Have you ever considered that you can't have a set of backward people living among people advanced in one kind of civilization and have a social Arcadia?” Atticus asks Jean Louise. The question is poisonous but hardly contradicts what came before. Atticus has always been depicted as a Southern traditionalist; the childlike perspective of *To Kill a Mockingbird* simply elided the uglier consequences of those traditions, because a young daughter overlooks the faults of her father that are beyond her understanding.

*Watchman* is unmerciful both to Atticus and to Jean Louise, whose youthful fractiousness has calcified into a judgmentalism closer to that of her much loathed Aunt Alexandra than she'd like to admit. Jean Louise's realization that the loss of innocence is something to be grieved and overcome—as much as the loss of a brother—is the lesson *Go Set a Watchman* teaches.

While *To Kill a Mockingbird* ends with a sense of hope that at least some people truly are good, *Go Set a Watchman* wraps up with resignation that people often cannot change. Books can be self-contained; lives have the sad tendency to grow only messier as time goes by.

—DANIEL D'ADDARIO

TIME  
PICKS

## MOVIES

**Tig** Comedian Tig Notaro's stirring stand-up set announcing her breast-cancer diagnosis, which went viral in 2012, is now the subject of a documentary, out July 17 on Netflix.



## MUSIC

**How Does It Feel** by **MS MR** The New York City-based alt-pop duo release on July 17 an album full of sharper hooks and heavier beats than their first.

## BOOKS

**Bennington Girls Are Easy** by **Charlotte Silver**

A witty satire about privileged college grads trying to navigate early adulthood, Silver's novel should appeal to fans of *Girls*. It's out July 14.

## TELEVISION

**Sharknado 3: Oh Hell No!** Ian Ziering and Tara Reid are back for another campy installment, airing July 22 on Syfy. Expect killer sharks and celebrity cameos.



## New view of a wide-angle Impressionist

GUSTAVE CAILLEBOTTE IS one of those artists—Vermeer was another—who got lost for a while. He was just 45 when he died, in 1894, after suffering a stroke, and in the years after his death his work was largely forgotten. But his irresistible canvases turned out to be sleeper cells, waiting to surface again. Their moment arrived in the 1960s, when his disorienting perspectives—straight down on the top of a city tree, for instance—were recognized as a foretaste of 20th century rule breaking. But more than that it was his enigmatic and unsentimental take on the world—and specifically the world of fast-changing Paris, the cockpit of 19th century modernity—that marked him as an artist speaking as much to our time as his own. More, actually.

Giving this man his first major American retrospective since 1994 is the public service performed by “Gustave Caillebotte: The Painter’s Eye” at the National Gallery of Art in Washington, which runs through Oct. 4, then moves to the Kimbell Art Museum in Fort Worth. Caillebotte was wealthy, rich enough to bankroll several of the independent exhibitions the Impressionists organized during the time the French Academy kept them largely excluded from its official salons. But he was no hanger-on with a fat wallet. Like William Burroughs, the great Beat writer who just happened to be heir to the Burroughs cash-register fortune, he was a rich young man with a real and sometimes unnerving gift.

Although Caillebotte exhibited alongside the Impressionists, he rarely adopted the loose brushwork and bright palettes of Monet, Renoir or Pissarro. He was academically trained, and when it suited him he was perfectly capable of a conventional illusionism on the canvas. That’s what he brings to his masterpiece, *Paris Street, Rainy Day*, a wall-size canvas he completed in 1877. It’s an epic of everyday life, a snapshot of people strolling in wet weather. It’s



Self-Portrait, 1888–1889.  
Caillebotte five years before his untimely death

punctuated by English-style steel-ribbed umbrellas, a relatively new fashion at the time, making this a bit like a picture of people today poking at their smartphones. In this industrial-age scene, the mute material world is like another actor. A metal lamppost not only bisects the picture but seems to preside over it. The cobblestones push forward as a mass-produced chorus, as anonymous as the people who walk on them.

In the foreground is a man cut in half by the edge of the picture. Like Degas, Caillebotte understood that pho-

tography had things to teach painting. The very haphazardness of photos—the way they slice people off or catch them bunched in crazy combinations, the way they could make a random lamppost a central player—was the thing that made photography the natural language of the modern age, an age of darting movements, scrambled hierarchies and anonymous passersby. The plunging diagonals in some of Caillebotte’s city scenes, the avenues and apartment buildings receding sharply into the distance, owe a debt to the distortions of wide-angle lenses. They make his streetscapes vaguely troubling—both visually exact and unreal, a premonition of the high-def incongruities that Surrealists like Magritte and Dalí would produce decades later.

The most fascinating picture in the show is *On the Pont de l’Europe*, which Caillebotte completed in 1877 but never exhibited. Perhaps he thought it was too much for people to absorb. We see three men on a steel bridge, again with one figure cut in half. The bridge is pressed so close to the surface of the picture that we have hardly any breathing room. The men have their backs turned to us, near enough to touch but so enclosed within themselves that they’re utterly unknowable—in other words, city dwellers.

It’s customary to say of Caillebotte that because he didn’t need to make a living from his art, he didn’t have to worry about pleasing the taste of his time—he could paint for himself. Which is a good thing, because as it turns out, he was also painting for us.

—RICHARD LACAYO





Paris Street, Rainy Day, 1877. Plunging perspectives and sliced figures suggest the aggressive angles of modernism to come

On the Pont de l'Europe, 1876-77. Faceless men in a shallow space, a challenging scene that Caillebotte never exhibited

**LOVE IT**  
**LEAVE IT**

- Kim Kardashian's wax replica at Madame Tussauds** is her taking a selfie with a functioning camera that visitors can pose with. 
- For two of its upcoming movies, Paramount will **shorten the theater-to-DVD wait time**—typically more than four months—to just two weeks after the number of theaters they're playing in dwindles to fewer than 300. 
- HBO will release a **special Game of Thrones** edition of the board game Risk. It will retail for \$74.95, starting in August. 
- In honor of Pope Francis' visit, Paraguayans **created a free Internet game** called *Papa Road*, in which the goal is to steer his car—a.k.a. the Popemobile—down a road without hitting any potholes. 
- 21st Century Fox is **planning to make Duff Beer**, Homer Simpson's fictional drink of choice, into a real beverage. 
- Johnny Depp **visited pediatric cancer patients** as Jack Sparrow. 

TIME'S WEEKLY TAKE ON

WHAT POPPED IN CULTURE

Some McDonald's customers complained that the Minions toys in their kids' Happy Meals **sounded like they were cursing**.



Russian authorities had to **make a guide for taking selfies** safely after a number of selfie-related injuries.



KFC in the Philippines has unveiled a **pizza with a fried-chicken crust**, dubbed the Chizza.

Police investigated a video that showed singer **Ariana Grande licking doughnuts** at a Southern California bakery.



An audience member was **on her phone throughout Patti Lupone's performance** in *Shows for Days*, prompting the Broadway star to snatch it. Lupone later commented:

**'We work hard onstage to create a world that is being totally destroyed by a few rude, self-absorbed and inconsiderate audience members.'**



KARDASHIAN: JONATHAN HORRLE; MADAME TUSSAUDS LONDON; RISK: GAME OF THRONES—HBO/USAOPOLY; PAPA ROAD: SUPER DUPER GAMES; DUFF BEER: FOX; POPE, DEPP, LUPONE: GETTY IMAGES; GRANDE, PIZZA, CHICKEN, DOUGHNUT: AP; MINIONS: MCDONALD'S





ESSAY

# I'll never bake pies, and other life lessons from a renovation

By Susanna Schrobsdorff

I USED TO THINK THAT TO REALLY KNOW MYSELF AS A mother and human being, I'd have to go on one of those wilderness retreats where you learn to make fire with a rock and trust other people not to let go of the rope. Or maybe there'd be a natural disaster and I'd find out that I'm more courageous and in far better shape than I thought.

It turns out, all I had to do to get a tour of my soul was strip my kitchen down to the studs and empty its contents onto my living-room floor. One minute, all my idiosyncratic possessions were safely out of sight, and the next, my whole life from college through working motherhood was laid out like a personal anthropological dig, from wedding china to aspirational appliances. And every bit of it is evidence of my many attempts to find the tools that would make me a better hostess, a proper wife and a great mother.

**SO WHAT DOES IT SAY** about me that I have three unopened packages of pumpkin-carving tools and 27 pieces of orphan Tupperware? And how about the realization that I have never made a single smoothie, nor have I pureed anything in my life, yet I've kept a totally unused Cuisinart for 15 years because I am unable to give up on the idea that I'll become the kind of mom who makes things that require a Cuisinart? It says a lot, actually. Because we are what we choose to save, or can't bear to throw away, either for nostalgia's sake or because we're holding out hope that some better version of ourselves will actually use those things—that we'll finally be the kind of mom who carves pumpkins and uses their contents to make pie.

I'm not sure why so many of us care so much about mastering these old-school feminine skills. After all, most of us work, and many of us have husbands who are more than willing to step up. But the terrible secret of modern womanhood is that we still judge ourselves on domesticity. Somehow, no matter what we accomplish outside the house, our internal report card still has a kitchen grade. Sure, it's popular to joke that you're a terrible cook or you're lousy at shopping for school lunches, but to be actively uninterested is possibly more guilt-inducing for my generation than for my mother's. We work so much, it can feel as if we have more to make up for.

Alas, I don't think millennials or my teenage daughters are going to escape these expectations. There's a wave of actors like Gwyneth Paltrow and Blake Lively peddling lady-lifestyle websites who won't let them. If they have their way, my grandchildren will be contemplating the merits of hand-carved salt dishes and spiritual exercise routines.

Of course, most of these new domestic-diva sites are really about looking and longing—like the shoes in *Vogue*. But the idea that ideally we should be able to bring home the locally sourced bacon, fry it up in the artisanal pan and never, never let your co-parent forget he's a man still seeps into our collec-



tive consciousness. And so if you are, like me, too exhausted by Thursday night to do more than open up a jar of spaghetti sauce, it's hard to feel like you measure up.

**BUT LET ME NOT** disenfranchise all the women who are good at this stuff and love it. (You know who you are.) I have friends who find baking relaxing. I hope they'll teach my daughters how to make a decent piecrust. I worry that they've grown up thinking "home cooked" means reheated takeout. My culinary tips have mostly been about choosing perfect bagels and other brunch foods. (I've also taught them never to use the word *utilize* because it's pretentious and most of the time a simple *use* will do. But that won't help them much with dinner.)

However, after surveying 20 years of kitchenware I do have a few domestic lessons to pass on: 1) The things that you love most break first. This is because you use them a lot. So if you wind up with mostly ugly plates and oddly shaped glasses that are hard to wash, don't be hard on yourself. 2) Even if you get divorced and split up the wedding gifts, you can still end up with two fondue sets, three French-press coffee-makers and more gravy boats than any reasonable person could use. 3) It's nearly impossible to throw away the last sippy cup. 4) If your aunt leaves you a notebook in which she recorded all her dinner parties, noting each course, the wine and who attended, keep it. Someday, you might really want to know what one drinks with stuffed quail.

**Carli Lloyd** The U.S. soccer star talks about her historic World Cup hat trick, handling instant fame and the future of her sport (listen up, FIFA)

**What's been the coolest thing to happen since you scored three goals in the World Cup final—and became one of the most famous people in America?** The ticker-tape parade in New York City. People in windows dressed in red, white and blue chanting our names, paper flying everywhere. To know that people are so inspired by me and my teammates is incredible.

**What's been the biggest challenge in managing instant fame?** I operate on a good nine hours of sleep, and I'm operating on two to four hours possibly—lots of coffee, lots of power naps. I haven't run since I played the final. I haven't touched a ball. I'm just really soaking in a Hollywood lifestyle.

**Where's the strangest place you've been recognized?** When I arrived at the Philadelphia airport and one of the workers who was driving a golf cart asked if I could sign his golf cart. He had a marker and all. He was ready.

**Your family and fiancé did not attend the World Cup, at your request. Didn't you miss them?** I didn't miss them at all. I see them on a daily basis. I can always wait. We train for this every four years, and I don't want any distractions. I don't want to have to worry about tickets and travel and if they're having fun or squeezing time in to see them when I could be getting a massage and getting into an ice bath.

**What's next for women's soccer and the U.S. pro league, the National Women's Soccer League?** This World Cup was a huge turning point. It's going to continue to grow. Paying players a little bit more would definitely play a big part in that. There are lots of players who are about to retire after this year because they just can't afford to play on the salaries they're making.

**FIFA gave the German soccer federation \$35 million for winning last year's men's World Cup. The U.S. got**

**\$2 million for your win. Does that bother you?** Yeah, it does. We work just as hard, if not harder. We sacrifice a lot as female athletes. We have moms on our team who have their kids at home and have come back from pregnancy and have been great.

**Is the women's game better than the men's game?** It's different. Women don't flop as much as men. It's a pride thing. I'm not sure why some men do it.

**In a New York Times story published during the World Cup, former U.S. coach Pia Sundhage said you "could be one of the worst" players to coach. Did her comments motivate you?**

That stuff brings out the fire in me. If someone's going to say something, it sure as heck is going to backfire on you. And it tastes so much sweeter when that happens.

**You're planning on getting married after the 2016 Rio Olympics. Any thought of moving up the date? Plenty of reception halls would be happy to offer a Carli Lloyd discount.**

[Laughs.] Not really. We want to do it after the Olympics so I'm in full focus mode. But there have been a lot of wedding planners and dress boutiques that have reached out. So, I mean, if I can get a free wedding dress...

**You've now scored the winning goals in two Olympic gold-medal games and had a huge World Cup final. Do you have some kind of clutch gene?** It's just training over and over to be a fierce competitor, to be an underdog. I want to leave the game as one of the best players ever. And in order to do that, you need to score in big moments. You need to rise to challenges. That's what I love to do. —SEAN GREGORY

**'Women don't flop as much as men. It's a pride thing. I'm not sure why some men do it.'**



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